# Integrating lecture recording to support flexible learning and responsive pedagogies in a dual mode undergraduate law degree

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**Declaration**

This work has not been previously submitted in whole, or in part, for the award of any degree. It is my own work. Each significant contribution to, and quotation in, this dissertation from the work, or works, of other people has been attributed, and has been cited and referenced.

Signed by candidate

10 February 2019

Signature Date

**Abstract**

This study investigates the integration of lecture recordings to support flexible learning and responsive pedagogical approaches in an undergraduate LLB degree presented in a dual mode (face-to-face and online) by the University of the Free State's Faculty of Law. In this faculty, lecture recording is observed by compulsory integration in all classes; the only options pertain to three basic software tools. According to literature, integrating lecture recording can bring about flexibility in student learning, and flexibility can have both positive and negative implications for student learning. This study uses Puentedura's (2006) SAMR (Substitution, Augmentation, Modification and Redefinition) model as a theoretical lens to analyse different levels or types of integration of lecture recording by students and lecturers. The SAMR categories assisted the study to identify whether Substitution, Augmentation, Modification or Redefinition were present when students and lecturers integrated lecture recording in teaching and learning. The study implements a mixed-method research approach that included student and lecturer surveys, lecturer interviews, and telephonic interviews and focus group discussions with students. Findings indicate that students' overall experience of lecture recording was that it enhanced their learning and gave them flexibility regarding how, where, when they could learn. Some lecturers claimed that lecture recording enhances their teaching methodology, and that it can have an impact on their students' learning. Lecturers agreed that lecture recording can be applied and integrated to transform the way they teach. Lecturers also indicated that lecture recording, in the form of audio recordings of lectures, in some instances caused students to hold lecturers accountable, not always fairly, for their utterances in class. Both staff and students indicated that they had concerns about class attendance when lecture recording was used, regardless of whether lectures were recorded when presented online or face-to-face. The study found that campus-based and online students integrated lecture recordings as part of their learning experiences in a variety of ways. The majority of campus-based students reported using lecture recordings to augment their learning experiences, especially in relation to how and whether they attended face-to-face lectures. Modification strategies for online students included making use of lecture recordings as a substitute for their presence at face-to-face lectures. Some online students reported that engaging with lecture recordings made them feel part of the course and its community of students. Lecturers' specific approaches to teaching play a considerable role in the way they experience lecture recording and the way they integrate

it in their courses. In addition to survey findings, the study also presents lecturer views, to illustrate some of these variations and interplays. While some lecturers reported that using lecture recordings has completely transformed the way they teach, others admitted that if they had a choice, they would not use lecture recordings in their teaching. The study offers a contextual account of lecture recording integration and contributes to global debates around lecture recording. Student and lecturer experiences with lecture recording, as observed through various SAMR levels of integration, depend on the type of lecture recording tool and software used, beliefs relating to the purpose of a lecture, regardless of its mode of delivery, and the reason for recording it in the first place. The study contributes to a local understanding of lecture recording integration and stimulates new dialogue that could guide future integration of lecture recording technologies, locally and internationally.

**Key words:** Lecture recordings, Web-based learning technologies, Flexible learning, Responsive pedagogy, Lecture capture, SAMR model

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| | |
|---|---|
| CHE | The Council on Higher Education is an independent, statutory body in South Africa that is responsible for providing advice to the minister of Higher Education and Training, for developing and implementing a system of quality assurance in higher education, for monitoring and reporting on the state of higher education, and contributing to the development of higher education. (https://www.che.ac.za/) |
| ICT | Information communication technology communicates, creates, stores and manages information through a varied set of technology tools and resources. |
| LLB | Legum Baccalaureus is an undergraduate law degree. |
| LMS | Learning Management System refers to software used to distribute and manage courses at educational institutions for the purpose of achieving blended and/or online learning. Functions of an LMS include content distribution, online assessments, collaboration and management of student data. |
| SAMR | An educational model proposed by Ruben Puentedura. SAMR stands for substitution, augmentation, modification and redefinition. |
| UFS | University of the Free State |
| WBLT | Web-based lecture technologies |

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# CHAPTER 1: OVERVIEW OF THE STUDY

## 1.1 Introduction

Numerous institutions worldwide allocate significant human and monetary resources to the integration and adoption of technology for teaching and learning purposes (Conde et al., 2014). Furthermore, the use of technology is often associated with responsive teaching practices. Graue, Whyte and Delaney (2014) explain that responsive instruction needs to be designed and organised well, must be relevant to students' needs, and take place across multiple modes of provisioning. The majority of current studies on lecture recording investigate where lecture recordings are intended to function as a supplementary resource in blended learning approaches. Few studies have investigated the integration of lecture recordings in dual-mode educational offerings, which include both campus-based blended learning experiences and fully online provisioning.

A shortage of educational infrastructure and the high cost of resources, accompanied by socio-economic injustices and inequalities of the past, are but some of the issues faced by South African education institutions (Taylor & Yu, 2009; Mobius, 2017). Czerniewicz and Brown (2009) argue that institutional context plays an instrumental role in the way educational technologies are adopted and used. It is, therefore, imperative that South African institutions evaluate and investigate the use of educational technology, not only to ensure that it is sustainable and cost-effective, but also to ensure that it creates opportunities for responsive pedagogical practices.

This study investigates a specific educational technology, namely, lecture recording. As long ago as 2009, lecture recording technology was described as becoming mainstream in higher education institutions (Craig et al., 2009). Lecture recording is defined as using educational technology to capture or record a lecture and distributing the recording online. Lecture recording can be used to create flexible learning (definition found on page17) opportunities. Massification in South African universities and economic inequalities are some of the reasons why flexible learning opportunities and tools for pedagogic approaches that support it are important. As will be discussed later on in this thesis, existing studies make use of a variety of terms interchangeably to refer to lecture

recording. The study found research into lecture recording, however, this literature used terms such as lecture capture, podcasting, and class recordings interchangeably.

## 1.2 Rationale

As a senior instructional designer in the Faculty of Law at the University of the Free State (UFS), my daily work involves supporting and consulting with lecturers about their use of educational technology tools at our institution. Day-to-day support involves consultations about pedagogical approaches to blended and online learning, and the use of appropriate educational technologies. Support includes the creation of over 500 online courses annually, analysis of student and staff participation in online learning environments, and the design, development and integration of technology-enriched curriculum through training. My research focus on lecture recordings emerged from the daily use of audio and/or video recordings by the Faculty of Law. Lecturers in the Faculty of Law make use of lecture recording, and the impact and usage of the tool is discussed at institutional level, but it is not explored in great detail. My point of departure was to understand lecture recording integration, along with its potential benefits and challenges for teaching and learning within my own context.

The South African Council on Higher Education's guide for distance programmes in universities (CHE, 2013) aims to assist faculties and institutions to implement sound pedagogies when they implement educational technology . The CHE uses the guide mainly to assist institutions to review and accredit distance education programmes. The guide had a significant influence on this study, as curriculum designers in the UFS Faculty of Law often refer to this document, due to a national review done by the CHE in 2017 of the South African LLB degrees offered by universities. The review reiterates a renewed focus on the integration and measurement of the impact of technology used in curricula. Faculties of law across South Africa are encouraged by the review to use technology to create more flexible, accessible and interactive content, by including technology in curriculum review. These and other objectives of the CHE align well with the benefits that educational technology can bring, especially when it is focused on enabling flexible learning opportunities.

Given this context, the integration of lecture recording and the way it can be used create flexible learning opportunities in a LLB degree programme is, therefore, of key interest to this research. The way lecturers and students perceive the benefits of

lecture recording in relation to flexibility of teaching and learning was the focus of this study.

### 1.3 Research site and context

The site of study was an undergraduate LLB degree offered by the Faculty of Law at the UFS. Law as a field of study involves interpretation of cases, with an emphasis on text analysis, oral defence and other critical thinking skills. The LLB degree at the UFS is presented across two provision modes: a campus-based mode and an online learning mode.

Modules are presented over a period of six months or, in other words, a semester. The module where this study was located is presented in the second year of study, in semester 2, from July to December. Fieldwork took place from January 2017 to April 2018. The module, called LLAW 2624* for the purposes of this study, to retain confidentiality, is a second-year module. It was selected because it is a requirement of all Bachelor of Law degrees – students have to take this module as part of their LLB course. Choosing this module ensured that the study involved students who have already taken a minimum of 15 modules in their LLB degree, regardless of their mode of provisioning. A total of 66 students participated in the study. Survey respondents consisted of 30 campus-based students and 15 online students; telephone interviews were conducted with five online students and five campus-based students. A total of 11 students participated in the focus groups. Lecturing staff participated in the lecturer survey. These eight participants were the lecturers who taught the 15 undergraduate modules that precede LLAW 2624*. Three lecturers were interviewed.

The Faculty of Law makes frequent use of lecture recording, which is compulsory. Faculty members emphasise that students should be able to access recorded lectures, which serve as a resource to facilitate their academic success and participation. Lecture recordings are intended to function as a supplement for campus-based students, and as a substitute for online students who are not able to attend lectures face-to-face.

The fact that two provision modes exist for the same module creates a unique scenario for lecturers. Typically, the same lecturer coordinates a module in two modes of provisioning: a campus-based mode, where lecturers make use of blended learning,

and a fully online mode. This teaching scenario is uniquely complex, given the way that it exposes a lecturer to two distinctly different teaching scenarios every day. A lecturer can be an online distance learning facilitator in the morning, and a face-to-face lecturer in the afternoon of the same day. Campus-based students have their own course site on the learning management system (LMS) as do online students i.e. the students are enrolled in different course sites but have access to the same resources.

In the Faculty of Law, using educational technology in the form of lecture recording tools (recording or capturing a lecture by video and/or audio and making it available for later) to ensure that a lecturer's lecture reaches students, is an integral part of lecturers' teaching aims. Lecturers are required by the Faculty to record all the lectures they present in class, as well as the lectures they stream through Blackboard Collaborate. Recording lectures through lecture recording technology ensures that campus-based students have access to a lecture almost immediately after a lecture has taken place, while online students have access to the recording of a streamed session immediately after the online class ends, and/or access to the recording of the face-to-face lecture almost immediately after the lecture has ended.

Streaming of live lectures is rarely done in any module; instead, students view or listen to prerecorded lectures that they have access to prior to the face-to-face class. Both online and campus-based students view or listen to audio and/or video recordings that their lecturer recorded for them before a face-to-face and online lectures. The recording enables campus-based students to listen to or view a lecture more than once; however, when online distance students view or listen to a recorded lecture for the first time, they are not part of the live environment.

At the UFS, using educational technologies for lecture recording is highly regulated. Lecturers can choose between three technological tools to record their lectures: Blackboard Collaborate, audio recorders and Microsoft Office Mix. Lecturers and other staff may only implement the software or tools that are on offer; to use anything else would involve a software approval process. If lecturers wish to make use of alternative tools they have to obtain permission from the Information and Communication Technology (ICT) department, and obtaining approval for alternative tools can be a lengthy process. Consequently, the majority of lecturers use one of the three institutionally supported tools. A 2017 analysis of module data, done by the

instructional designer, indicated that, of 85 sample LLB modules in the Faculty, 79% of modules used audio recorders and only 9% made use of Blackboard Collaborate and Office Mix. The analysis was done by checking the course content of every module to determine what educational tools were used. From the data it is clear that most lecturers prefer to audio record lectures.

Each recording or file is uploaded to Blackboard, the institution's LMS. In order to distribute the lecture recordings effectively, the instructional design support team have to load these to an additional content server and link the lecture recordings to the different Blackboard modules. The reasoning behind using an additional content server for these lecture recordings relates to file sizes.

## 1.4 Theoretical framework

The study is informed by the work of Ruben Puentedura (2006), who conceptualised the SAMR model for investigating the integration of a range of technologies. This model can also be used to analyse the integration of lecture recording, specifically in a context where different modes of provisioning occurs. SAMR aims to gauge and guide the use and integration of educational technology to determine whether intrinsic changes occur in learning behaviour (Puentedura, 2006). The SAMR model is used to classify educational learning and objectives into two main categories, namely, enhancement of learning, and transformation of learning. The categorisation is done by determining whether educational technology is used by incurring Substitution, Augmentation, Modification or Redefinition in learning. The categorisation was first done in K12 schools, though literature on lecture recording often makes use of similar categories.

Using lecture recording tools in higher education is often criticised. Phillips (2005) and Gosper et al. (2008) claim that lecture recording of university teaching could cause dissonance between theory and practice. The SAMR model is not often used for integrating specific educational technology, instead it is generally used for mobile learning or e-learning (Romrell, Kidder & Wood, 2014). SAMR has not been used to investigate the integration of lecture recording, specifically. The New Media Consortium (NMC) report of 2017 encourages the use of the SAMR model, and states that it can be instrumental in ensuring that lecturers are using technology beyond "mere content delivery" (Adams et al., 2017:41). Nkonki and Ntlabathi (2016) used the

SAMR model to investigate whether the integration of technology tools found on their LMS was of a substitution and augmentation nature, and/or if the integration showed evidence of modification and redefinition. Their conclusion is that, due to the managerially driven decision to integrate tools, the level of substitution and augmentation was superficial. They found limited evidence of transformation by modification and redefinition, due to a lack of changes in curriculum design and delivery.

## 1.5 Research questions

The study explored how the integration of lecture recording supports opportunities for flexible learning and responsive pedagogical approaches in a campus-based and online undergraduate law degree at the UFS. For the purpose of this study, responsive pedagogical approaches are defined as approaches that adapt a teaching methodology to include diverse student needs and preferences by integrating lecture recordings into the pedagogy of a module presented to both campus-based and online students (Fuchs, 2016). Lecture recording enables flexible learning, which enables responsive learning, which in turn enables deeper learning opportunities for students. Dabbagh (2003) uses scaffolding as a responsive teaching approach, by incorporating the use of online learning tools to help students become “more self-directed, self-regulated, and self-reliant”.

The study aimed to identify key elements of the way lecturers teach and how students learn through the integration of lecture recording in the UFS Faculty of Law. The study investigated how the integration of lecture recording in teaching and learning in this faculty substitutes, modifies, augments and/or redefines student and lecturer experiences through the technology of lecture recording.

This aim was achieved through the investigation of the following research questions:

1. In what ways do students integrate lecture recording to enable flexible learning?
2. In what ways do lecturers integrate lecture recording to enable responsive pedagogical approaches?

## 1.6 Research design

The research design of this study is located within the interpretive paradigm. This perspective affirms that all assumptions regarding lecture recording as a phenomenon in teaching and learning should be approached from the viewpoint that in-depth examination and categorisation would guide the study's interpretations and observations in a specific context. Ontologically, the research design recognises multiple realities, and that those realities merit investigation and exploration. The design emphasises that the social realm may not be subject to the same methods that research investigations into the natural world are subject to. With an interpretive paradigm approach, "the social world can be understood only from the standpoint of individuals" (Cohen, Manion & Morrison, 2007:19).

SAMR provides a guided framework for understanding how students and lecturers integrate lecture recordings. In turn, an interpretive perspective recognises multiple levels of integration and offers insights into flexible learning and teaching opportunities.

The study employed the mixed-methods research design to explore lecture recording integration by students and lecturers and how it creates flexible learning and teaching opportunities. The dual mode programme that was investigated by this study required the researcher to use a combination of research strategies for data collection. The main research instruments that were used to investigate the study's research questions were surveys and interviews. Surveys were used to ask questions and obtain feedback from participants in terms of preferences and experiences. Online surveys and telephone interviews were used to ensure that a wider audience was reached, especially considering that not all students were based on campus.

Structured and focus groups were incorporated as a method to gather student and lecturer perceptions and comments regarding the way they used and integrated lecture recording. Interviews were done telephonically and in-person, to gather the details needed for an in-depth exploration of participants' experiences regarding the use of lecture recording, the way they use it in their teaching and learning, and whether lecture recording enables flexible learning.

## 1.7 Significance of the study

It can be argued that the value of educational technologies, such as lecture recording, is speculative, and assumed to be positive. Many existing studies of lecture recording lack a theoretical perspective of integration. This study argues that integration of lecture recording must be informed by theoretical underpinnings that technology integration research, such as Puentedura's SAMR model, provides.

The study offers a timeous dialogue to faculties of law in South Africa and other countries, where the use of lecture recordings is becoming more prevalent. A national review of all major South African universities will benefit role players involved in curriculum design, who will have a better understanding of the way the integration of lecture recording is viewed by students and lecturers. The study encourages lecturers and instructional designers to be critically minded and design conscious when lecture recording tools are implemented, by considering the levels of integration expressed by participants of this study. This knowledge will enable lecturers and instructional designers to be less solutionist about the way they use lecture recordings in other programmes of study as well (Selwyn, 2016).

A study by Brooks and Pomerantz (2017) in the United States of America found that 35 760 student participants had preferences for certain educational technologies. Among these technologies, lecture recording was the most preferred and desired. Research findings like this and others mentioned above should be approached cautiously. When research is decontextualised from the institutional context, no insight into how it was integrated into the curriculum or the mode of instruction at those institutions were evident. Some students would like educational technologies, such as lecture recording (or, as described in Figure 1.4, lecture capture) to be used more, while others simply want it to be used continually, but with lower frequency.

## 1.8 Dissertation structure

Chapter 1: This chapter provided an overview of the study; it included a rationale, overview and context of the study. This chapter also discussed the research questions and the research design.

Chapter 2: The literature review will commence with an explanation of key concepts used in this study, and will explain the SAMR model, which was used to investigate

the integration of lecture recording, in more detail. The chapter will also offer an over of global and local empirical studies and their respective methodological approaches.

Chapter 3: This chapter will describe the research methodology and the research orientation and approach. The chapter will provide detail pertaining to the selection site, data collection process and research participants. Data analysis methods, along with issues relating to validity and ethics, will also discussed in this chapter.

Chapter 4: This chapter, entitled *Undergraduate law students and lecture recording*, will present the findings and a discussion, with a focus on the first research question. It will investigate and analyse data gathered from online surveys and individual and focus groups with students. The chapter will apply the SAMR model and discuss how students integrate lecture recording to create flexible learning opportunities.

Chapter 5: The chapter will present findings and discussion under the heading, *Integration of lecture recordings in teaching*, and will focus on the second research question, which relates to responsive pedagogical approaches. It will investigate and analyse the data gathered from online surveys and individual interviews with lecturers.

Chapter 6: The final chapter will present conclusions and recommendations, and will conclude the study by presenting insights gained through the analysis of the students' and lecturers' qualitative and quantitative data. It will also present recommendations for future studies.

# CHAPTER 2: LITERATURE REVIEW

## 2.1 Introduction

The purpose of this chapter is to define key concepts used by the study, review empirical studies and explore theoretical approaches of existing literature related to the integration of lecture recording in university settings. The chapter will discuss a range of definitions of lecture recording, and offer a review of current and past global and local research on lecture recording. The study will interrogate existing theoretical perspectives by focusing, specifically, on how SAMR as a technological integration model adds value. The study found that lecture recording can be used to identify potential pedagogical opportunities as well gaps in creating flexible learning opportunities. The use of SAMR levels enabled the study to identify similarities and differences that exist across contexts.

The chapter will reiterate that lecture recording and educational technology, in general, can be approached from either a technology integration or technology adoption perspective. Most studies investigated the adoption and preferences of students and lecturers, instead of considering technology integration though the lens of a theoretical framework.

The fact that lecture recording is understood differently at different institutions will be considered, by investigating its underlying context and history and by defining flexibility in teaching and learning by analysing past and current literature relating to its application, revision and complexity. The chapter will also report how the word has come to be associated with certain meanings that are specific to the South African context. This explanation will be based on an exploration of literature and how the SAMR model can be used to better understand the integration of lecture recording. The chapter will discuss gaps in existing research by giving examples of literature and studies that failed to address the link between technology integration and flexible learning opportunities, and responsive pedagogies that enable flexibility.

## 2.2 Review and exploration of key concepts

Defining and explaining key concepts helped the study to engage with its research questions. Key areas that were used to frame these concepts are lecture recording as

an evolving construct, flexible learning and responsive pedagogical approaches, and blended and online learning provision modes.

### 2.2.1 Lecture recordings as an evolving construct

Few studies offer a clear definition of lecture recording. This section will offer an overview of current definitions, and discuss challenges associated with defining lecture recording. In this study, lecture recording was used to describe the practice of recording a face-to-face lecture, or using particular tools to deliver a lecture that is recorded. This study considered lecture recording as a technology agnostic umbrella term, and the study will include the definitions of lecture recording, where relevant.

Different institutions across the world have different definitions for the practice of recording a lecture. Terms, such as capture, stream, cast or post, are used frequently when researchers describe the event of recording a lecture. This variation is due to the diverse contexts and complexity that are involved when reference is made to the action of recording and distributing a lecture. Due to the limited scope of the study, all actions described as capturing, streaming, casting or posting a lecture will be ascribed the universal term of lecture recording.

Literature makes use of the following definitions of lecture recording; the definitions are associated with particular hardware and software.

a) Lecture capture

Lecture capture is the term most commonly used in recent literature. A CHE report of 2008 argues that institutions should view lecture capture as an umbrella term to describe technology that records what happens in a lecture (CHE, 2008). Using a general term, such as lecture capture, can become problematic, because the term and definition of capturing a lecture are in some cases associated with specific software and technological infrastructure and processes. Nevertheless, lecture capture, as a universal term, is used with great frequency in various contexts to describe the action of capturing a lecture and making it available during or after a class. Owston, Lupshenyuk and Wideman (2011) explain that lecture recording involves digitally capturing a lecture and making it available on the web afterwards. Rui et al. (2004) refers to lecture capture as involving a live, on-demand broadcast of a lecturer and their presentation. From these initial definitions, it becomes clear that,

even though the term lecture capture is commonly used, it is explained in different ways.

Lecture capture as a term might not be easily recognisable in specific contexts. Umbrella terms aim to associate specific methods with use of the technology, but are inherently problematic. For instance, some universities might live stream and make recordings available after the lecture, while other institutions might record and stream simultaneously. Therefore, lecturers and institutions might use the same universal definition, e.g., lecture capture, however, in practice, they may practice different approaches. Locally, the University of Cape Town (CILT, 2019) makes use of a lecture capture system, but refers to this practice as lecture recording. Venues at this university are equipped with cameras, and lecturers schedule recordings from within the LMS. By contrast, recording at UFS does not rely on venues having particular equipment, but rather what the lecturer brings to the venue or decides to use. Dona, Gregory and Pechenkina (2017) advise that, due to technological advances and the growing foothold of educational technologies in higher education, lecture capture will continue to be difficult to describe and define.

b) Podcasting

The term podcasting emerged when the information technology company Apple launched the iPod in 2001. The iPod was the world's first mass-produced portable audio player that could store big amounts of audio at the fingertips of a user (McGarr, 2009).

Although the capabilities of mobile phones today make devices such as the iPod obsolete, the term still has currency. Education institutions still use the term podcast to refer to the use of audio-only lectures that are recorded and distributed. Gachago, Livingston and Ivala define podcasting as, "the recording and editing of audio files and subsequent distribution to students" (2016:1). The only definitive difference between the terms lecture capture, lecture recording, web-based lecture technologies (WBLT) and podcasting is that podcasting involves the use of audio only to record and distribute a lecture.

c) Web-based lecture technologies

The term WBLT is most commonly used by New Zealand and Australian universities to describe the activity of recording a lecture. Gosper et al. (2008) describe WBTL as digital recording systems that capture campus-based lectures and distribute it via online delivery. WBLT is also commonly associated with streaming media in multiple formats.

The term WBLT and its definition is almost the same as that of lecture capture. Craig et al. (2009) explains that WBLT constitutes a method of meeting learners' needs by being a just-in-time resource. This emphasis on synchronised and timeous 'on demand' distribution is not necessarily aligned with the way lecture recording is seen. The urgency implied by the 'on demand' definition is not, as Craig explains, present in other definitions of lecture recording or lecture capture.

### 2.2.2 Software and hardware as definitions

Software and hardware names for the capture or recording of a lecture are used interchangeably throughout literature (Toppin, 2010; Mallinson & Baumann, 2015; Dona et al., 2017), because different technological tools and various software companies are represented when a lecture is recorded/captured. Institutions, therefore, refer to lecture recording technologies such as Echo360, Blackboard Collaborate, Lectopia, Panopto, Office Mix, The Audios, the recordings, etc. The name of the hardware or software that is used at specific institutions, is used to refer to the recording, instead of existing terminology used in educational technology research.

This is a tendency observed in the literature as well as in the study's context, through work experience. People use the name of a commercial product or the medium (audio, video) to refer to the technologically mediated process of recording a lecture. The diversity of definitions demonstrate that lecture recording as a concept is difficult to define and terms do not have universally shared meanings. Recordings of a lecture might be referred to differently by campus-based and online students. Campus-based students might categorise the lecture recordings as additional resources in the form of a lecture recording or audio recording, whereas the same resource might be categorised as a WBLT by online students. This observation will be discussed further in Chapters 4 and 5. Literature does not always state clearly what provisioning mode

(campus-based or online) research refers to when lecture recording is defined. As discussed in Chapter 1, definitions of lecture recording often ignore institutional contexts and their modes of provision.

### 2.2.3 Pedagogical approaches

The terms pedagogical approaches and modes of provisioning are used interchangeably too, and this lack of distinction has the potential to cause misunderstandings. Literature reports that different modes involve different pedagogical approaches (Redmond, 2011). Understanding the distinction between these pedagogical terms helped the study to create parallel comparisons, to evaluate lecture recording, and determine how specific approaches are associated with each term. The study itself presides in a context where the pedagogical approach is institutionally linked to the provisioning mode.

#### a) Blended learning (campus-based students and lecturers)

In the context of this study, and as observed in most literature, campus-based students are commonly observed and encouraged to adopt the pedagogical approach of blended learning. This observation relates to the assumption that campus-based students mainly interact with their lecturer face-to-face. Blended learning moves away from the traditional view that teaching and learning can only occur during face-to-face contact between students and lecturers (Porter et al., 2016).

Blended modes of provisioning involve face-to-face lectures, supplemented by an online environment, with different tools that the lecturer and students can use in their teaching and learning practices. The primary pedagogical encounter is face-to-face, and online tools are used to supplement face-to-face interaction during lectures and/or tutorials, or to expand on it and, in rare instances, to replace it (Siemens, Gasevic & Dawson, 2009).

Lecturers can combine their face-to-face teaching time with online tools, such as blogs, wikis, discussion boards and lecture recordings. These types of collaborative tools are changing the way lecturers teach, and makes a blend of online and face-to face teaching possible.

Van der Merwe et al. (2015) argue that the term blended learning is used without it necessarily being clearly understood. They recommend a more pluralistic and guided re-evaluation of technology, to understand the affordances and potential that technology offers blended learning as a pedagogical approach. Institutionally derived definitions of blended learning are described as “one-dimensional” by Van der Merwe et.al. (2015) if these definitions place more emphasis on the mode of provisioning than on the effects it has on learning. Institutional influence, especially in relation to policies, may refer to face-to-face students being taught with a blended learning approach, but further investigation might show that some resources are just being posted online, thus implying an online repository or filing cabinet for resources, rather than a learning approach (Ng’ambi et al., 2016). Moskal, Dziuban and Hartman (2013) caution that the integrity of a traditional teaching and learning approach must reproduce the same standards and objectives when blended learning is approached. Their criticism alludes to the tendency to adopt blended learning using educational technology tools without developing clear goals and understanding blended learning approaches.

This research approaches blended learning as a provision mode that could include a variety of teaching and learning approaches. How exactly a ‘blend’ of a course is executed, varies across contexts, as each lecturer will approach blended learning differently. Some approaches to blended learning can be more flexible than others.

b) Online distance learning (distance learning students)

Online distance learning implies transactional distance between students and lecturers (Weidlich & Bastiaens, 2018). The concept of distance learning has been transformed by technology, as most distance learning programmes today are presented through the use of the internet and online software packages on an LMS (Traxler, 2018).

Online distance learning programmes and modules are delivered and purposed in order to teach a programme without face-to-face class or contact time. The CHE defines online distance learning as an endeavour of learning and teaching “concerned with the design of programmes that presuppose the spatial and/or temporal separation of lecturers and students for the majority, and possibly the whole, of the learning experience”. With reference to the absence of face-to-face class time, and the complete content of a module or programme being presented online, Weidlich and

Bastianens (2018) argue that technology becomes the mediating factor in distance learning. The distance between the lecturer and students is bridged by creating a learning environment that incorporates different online resources and interaction possibilities, of which student support, online tutorials, online peer groups, discussion forums and online practical lectures are some examples. Distance learning is possible in the absence of an LMS, where postage and courier services are alternatives. This method of distributing learning content is rarely implemented, due to the higher costs associated with it, and its unreliability, compared to what online tools offer (CHE, 2013; Salahuddin & Gow, 2015).

In this study's context, online learning is defined as technology-mediated learning that is facilitated online. Students are campus-based or online and have access to course material through an LMS. Institutionally, online distance education is defined as learning that can only be completed or occur through being technology mediated. Online students do not have any face-to-face contact time with lecturers or campus-based students – they only interact with other online students, online. Online learning implies the existence of a spatial distance and independence from a geographical campus, location and lecturing staff.

The CHE (2013), however, defines online distance learning as an evolving construct, and aims to achieve a recontextualisation of terms. It regards online distance learning as a collection of methods, structured in such a way that off-campus students can complete a course through independent study. The CHE categorises distance learning into two main categories, namely, single mode and dual mode. Single mode of provision implies fully online presentation, whereas dual mode implies the possibility of face-to-face components and distance.

c) Flexible learning

The term flexible learning is characterised by a learning and teaching practice that creates flexibility in terms of time, location of study, assessment and teaching (Burge, Gibson & Gibson, 2012). Flexible learning enables students to be selective in choosing when, how, and where learning occurs. Moran and Myringer (1999) describe this approach as learner-centred teaching. Gosper (2008) offers a broader view of flexibility, and argues that flexible learning can be achieved through various ways, not

just through technology, e.g., admission requirements, recognising various learning pathways, and block-release formats.

The term flexibility is complex and used in an irregular fashion in research. In an attempt to define flexible learning, it is imperative to associate flexible learning contextually, should a variety of approaches exist. Flexible learning describes learning that occurs at various levels, and which has various dimensions. The term flexibility has become synonymous with learning approaches such as blended and online learning (O'Neill, Singh & O'Donoghue, 2004; Harding, Kaczynski & Wood, 2012; Irvine, Code & Richards, 2013). Gosper (2008) argues that WBLT was introduced at Australian universities in order to create flexible learning opportunities that give access to lectures on demand; however, it is clear that the application and understanding of flexibility differs according to context. Technology is mentioned frequently as enabling flexibility, however, it is important to note that a variety of other institutional factors, such as admissions policies and learning paths, also play a role in creating flexibility.

Flexibility is often associated with specific educational pedagogical approaches, e.g., open, distance and blended learning. Ryan and Tilbury (2013) argue that flexible learning has often been viewed in terms of learning delivery and one therefore needs to be cautious in how it is interpreted. Flexible learning cannot, therefore, be considered without all the differentiating stakeholders and variants. Brown and Haupt (2018) looked at how using personal mobile devices increase flexibility and equity in students' learning. Their study found that students highly value how personal mobile devices enable flexible learning opportunities and how the technology supports students in their learning. Viewing flexibility from this perspective provides the study with an emphasis that flexibility offers students various opportunities to take responsibility for their own learning.

When flexible learning is seen as a vehicle to enhance 'deeper' levels of learning, descriptive integration models, such as the SAMR framework, provide a good foundation for enquiry and study. Educational technologies, such as lecture recording, is enabling in relation to various opportunities for flexible learning to take place, but it is necessary to disseminate descriptive levels of integration. For example, student absenteeism, due to sickness, sports events, or other circumstances, can be addressed by the flexibility that lecture recording enables (Desantis, Pantalone &

Wiseman, 2010). However, determining the level of learning that occurs through technology integration models, such as SAMR, might reveal a completely different application of flexibility. Flexibility, if viewed singularly, might, therefore, indicate that students are reached with flexible enabling opportunities, but whether those opportunities are conducive to the learning experience is a different question.

The pedagogical approach to blended and online learning modes allows for flexibility. Gordon (2014) explains an ideal flexible learning approach as learning that allows students to complete a course or module over a period of time using their own learning preferences, and access to support around the clock. Gordon adds that this structure also allows students the choice of when and how to be assessed. Gordon's explanation of a flexible learning approach fits in well with open-distance learning and flexible learning approaches, but can only occur if supported by the right technology tools, as well as by specialists in the field of learning design. The utilisation and choice of educational technology, including lecture recording, must be done in close collaboration with the pedagogical approach towards flexible learning. Therefore, a technology integration model, such as SAMR, is of great benefit when it is viewed together with flexible learning.

## 2.3 Review of empirical studies

### 2.3.1 Literature on lecture recording

The process by which lecturers and students record or capture a lecture is not new. Students and lecturers record lectures by taking notes, in shorthand, or by transcription, etc. Technology, such as tape players and camcorders, which were much less accessible in the approach to the end of the 20th century than today, nevertheless indicated that a new age was coming in terms of lecture recording and its possibilities.

In the period between 1980 and the late 1990s some education institutions made good use of technologies to record and distribute lectures. Education institutions benefited in an era when television and radio broadcasting were being expanded globally, at a time when public access to the internet was still in its infancy. Stanford University's Instructional Television Network (ITN) is one example of how lecture recording was integrated, and provides evidence of advances in digital video and audio compression.

The technology was used to share lecture recording with students through the broadcasting power of television (Tobagi, 1995).

Another example of the early adoption of lecture recording technology was Boston University of Engineering's Distance Learning Initiative, which integrated lecture recording as a support mechanism for their students in 1998. In later years, web technology and the internet became much more viable options for deploying digital video and audio recordings (Bracket, 1998).

Since the 1990s, a big shift occurred not only terminology, but also technology, especially for educational use. Web-based learning environments increased in popularity, and in 2000 the first open-source LMS was launched (Coates, James & Baldwin, 2005). The advances enabled by LMSs are integral in teaching and learning, as the LMS accommodates the distribution of lecture recordings, which have, to a large extent, depended on information technologies, especially an LMS. Almost all higher education institutions today have incorporated some sort of LMS to manage and analyse distribution of lecture recordings and other content.

With reference to recent advances in lecture recording tools, Greenberg and Nilssen (2009) describe lecture recording as "need-to-have" technology for teaching at higher education institutions. Greenberg and Nilssen (2009) describe lecture recording as the use of video and audio, as a learning technology that is specialised and expressly used in the education sector. Development and adoption of lecture recording tools are anticipated to be more focused on what makes a difference in teaching and learning, in the future, than on product functionality alone (Adams et al. 2017). The emergence of new, user-friendly software is described by Mallinson and Bowman (2015) as presenting more innovative possibilities.

### 2.3.2 Integrating lecture recording, and its impact

Within the higher education institution sphere, uses of lecture recording are widely reported (Rui et al., 2004; Greenberg & Nilssen, 2009). Toppin's research examined student and lecturer perceptions about academic performance when lecture recording was used. He indicates clear discourse between what students perceive as academic performance compared to lecturer perceptions (Toppin, 2010).

Elliot and Neal (2016) emphasise that research and literature regarding lecture recording relies mainly on surveying students, which constitutes a revealed preference approach by which the value of lecture recording is determined by students. Students consistently claim an appreciation of lecture recording, and claim that it helps them to understand material better. The trending term that Elliot and Neal (2016) reiterate, is that lecture recording, in a variety of literature, is emerging as a supplementary resource. This statement is in line with a finding that a number of institutions are using lecture recording as a supplementary resource for students (McGarr, 2009). Literature, in general, aims to explore student preferences regarding lecture recording. Although this provides a useful way to disseminate information and guide the exploration of new and emerging technologies, McGarr (2009) warns that the limitations of technology must be grounded by sound educational goals. Lecture recording has a distinctly different purpose from, for example, a short resource video, or a lecture recording that captures/records a face-to-face lecture or contact session.

The literature on lecture recording focuses on three main areas, which will be discussed below:

- The impact of lecture recordings on learning and teaching,
- Student decision-making regarding lecture attendance, and
- Lecturer attitudes to lecture recording.

a) The impact of lecture recordings on learning and teaching

Lecture recording and its impact on learning is reported to be primarily that of serving as a supplementary resource that supports teaching and learning (McGarr, 2009). Engstrand and Hall (2011) identify four main student uses of and preferences for lecture recording: Students use lecture recording to catch up classes they were unable to attend; they use lecture recording to obtain flexibility regarding study time; they use lecture recording as an exam revision tool; and to adapt to their own learning needs. Lecture recording's ability to enhance convenience and flexibility of and accessibility to learning is clear, especially if student feedback is recorded (Marchand, Pearson & Albon, 2014). O'Callaghan et al. (2015) did a study on using lecture recordings in the field of human resources education, which considered the institutional, student and lecturer issues experienced with recording face-to-face lectures and distributing them to students via an online platform afterwards. O'Callaghan et al. (2015) report that

students were positive about receiving the lecture recordings, the lecturers saw the benefits of using lecture recordings, and also indicated possible challenges experienced with class attendance and student engagement, and restrictions regarding the ways in which face-to-face lectures can be presented. This study concluded that “the good outweighs the bad”, and that there are more positive outcomes when using lecture recordings, than there are when it is not used (O’Callaghan et al., 2015).

Bennet and Maniar (2007) contradict some of above mentioned uses; their opinion is that lecture recordings make learning uninteresting and may hinder the development of students as independent thinkers. Another criticism of lecture recording in relation to it providing supplementary resources is that there is little or no evidence of an improvement in grades and the use of lecture recording (Owston et al., 2011). Regardless of criticism and challenges faced by lecture recording in relation to its value, most studies conclude that much research is needed, because a significant number of studies only make use of student self-reports, instead of a more holistic approach to be discussed further in Chapter 3.

b) Student decision-making regarding lecture attendance

Concerns about using lecture recording relate to the assumption that students’ class attendance might be affected (Topale, 2016). Dona et al. (2017) suggest that using lecture recording is not associated with or factored in in relation to students’ class attendance. Literature reports mixed results in relation to the impact of lecture recording on class attendance. Owston et al. (2011) indicate that lecture recording has a minimal impact on class attendance, whereas other studies observe a decrease in class attendance, especially where a blended learning approach is followed (Yeung, Raju & Sharma, 2016).

Research is divided on the effects of lecture recording on class attendance. It reports a very small impact on class attendance in face-to-face scenarios, which suggests that resistance to using lecture recording is justified (Deal, 2007).

c) Lecturer attitudes to lecture recording

Overall, the value of lecture recording is affirmed and appreciated by a number of researchers (Gosper et al., 2008; Owston et al., 2011; Newton et al., 2014; Mallinson

& Baumann, 2015). This view is not shared by everyone; Webster (2015: 88) argues that the traditional “lecture is under attack”, and is being replaced by lecture recordings being placed online. He argues that Vygotsky’s inner speech model and theory, which focuses on deeper thinking, is neglected by educational technology and, especially, by using lecture recording (Webster, 2015).

By exploring and reviewing the literature and history of lecture recording, attention was drawn to the tendency that trending educational technology often finds adoption without proper pedagogical and theoretical review (Selwyn, 2016). For this reason, this study critically investigated the use of lecture recordings by consulting and categorising a variety of theoretical underpinnings and methodologies used by other studies, to determine the context and cases where criticism is valid and challenges are faced by the technology of lecture recording.

## 2.4 Review of key methodological approaches

Literature that this study reviewed consisted mainly of mixed-method and qualitative studies. Quantitative-only methodology was rarely observed in the approaches investigated in the empirical review. The mixed-method studies provided background for the studies, as they often contained detailed literature reviews. This enabled the researcher to understand the background and influences that may have played a role in the findings that are reported. Mixed-methods studies are also characterised by the use of interviews, surveys, and data and number statistics to explore and understand student and lecturer preferences regarding lecture recording. Research in the field of educational technology is often regarded as complex (Reeves, Herrington & Oliver, 2005). Researchers investigating the relationship between qualitative and quantitative data to obtain a rich, structured and integrated process, often look to mixed methods (Driscoll et al., 2007). From the literature and studies observed, it is clear that qualitative and mixed-method research is preferred.

## 2.5 Review of conceptual and theoretical underpinnings of related studies

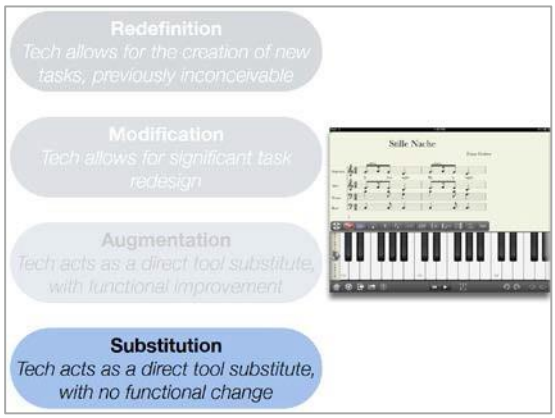
As observed in the empirical review (see Section 2.3), literature reports on a vast variety of diverse research regarding the integration of lecture recording tools. Consequently, the application of conceptual and theoretical underpinnings also brings about a variety of perspectives. The importance of using lecture recording as an

educational technology solution will find its true value and applicability only if it is rooted in relevant theory. Unfortunately, almost half the literature reviewed had no clear theoretical underpinning.

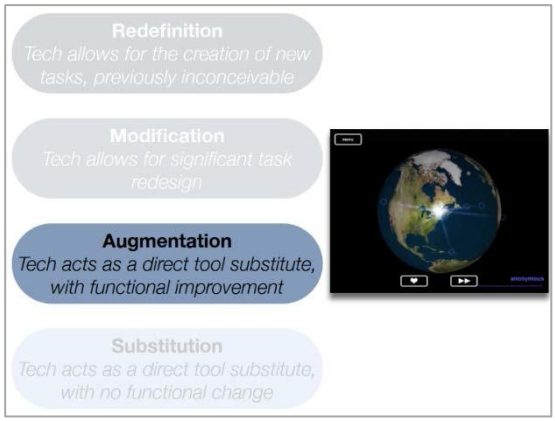
The SAMR model serves as a reflective tool and has been adopted by technology integration researchers as means to classify technology use into four categories: substitution, augmentation, modification and redefinition. Puentedura (2006) places the four components of SAMR into two categories:

- Enhancement – substitution and augmentation
- Transformation – modification and redefinition

The first category, enhancement, can be defined as using technology tools to enhance, improve or enrich teaching and learning pedagogy. The second category, transformation, refers to technology tools being used to transform or change the teaching and learning pedagogy. Puentedura (2006) uses various examples from different educational disciplines to illustrate what he means by the four components of SAMR and the two categories he place them in. One example relates teaching music, this is illustrated in Figure 2.1.

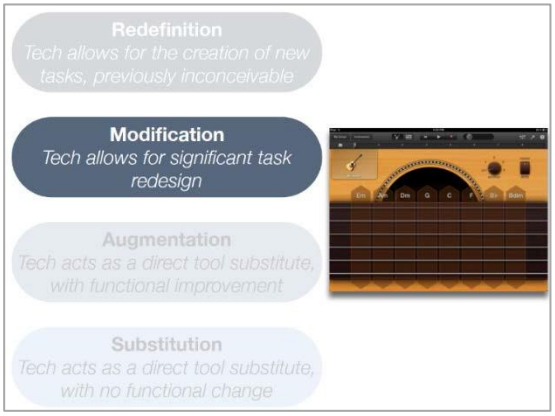



The app gives the student a imitated view of a real piano and how it works when he/she plays from sheet music.

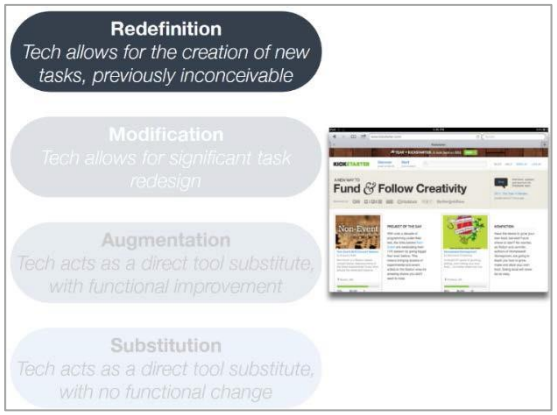



The app gives the student an opportunity to play the song by touching the notes as they move up on the screen at different rhythms and speeds.

ENHANCEMENT




On this site (Kickstarter), the student will create his/her own project based on specific instructions given and criteria set by the teacher. This helps the student to explore different music and design his/her own understanding.




The app gives the student an opportunity to play, on the guitar, his/her own tune and to record and replay the music written by the student him/herself.

TRANSFORMATION

**Figure 2.1: An example using SAMR in music education at school level**

This study incorporated the empirical literature to each dimension in order to demonstrate the diversity in approach, as illustrated in Table 2.1.

**Table 2.1: Puentedura's SAMR model**

| | Definition | How did I adapt SAMR for lecture recording? |
|---|---|---|
| Substitution (S) | Substitution is described as the level or phase that uses technology as a substitute for an existing practice (Romrell et al., 2014).<br>Therefore, lecture recording, as a recording of a lecture, falls into this category. Lecture recording is often merely used to substitute or replace a lecture. | Lecture recording is used to present the same lecture that would have been presented before the use of lecture recording. |
| Augmentation (A) | Augmentation is described as the level or dimension that utilises technology to offer improvement previously not achievable (Romrell et al., 2014).<br>Thus, lecture recording that enables annotation, rewinding, replay and transcription is categorised as augmenting a lecture. | Lecture recording is used because it serves as a better tool than what was done before lecture recording was used. |
| Modification (M) | Modification is explained as the level or dimension that creates a complete and significant redesign (Romrell et al., 2014).<br>Lecture recording, presented as a live session, with interactive collaboration, live comments and polling, which requires student to be actively involved, rather than merely observing a lecture, falls into this category. | Lecture recording is used to change the way students experience a lecture. |
| Redefinition (R) | Redefinition is the highest level or dimension described, and involves using technology to achieve teaching initiatives that were previously impossible (Romrell et al., 2014).<br>Lecture recording used as an instrument that is available to students to use at their own pace and own time, is an example of lecture recording being used to achieve something that was previously not achievable in a traditional lecture. | Lecture recording supports student-centred learning in various flexible ways. |

Source: Puentedura (2006)

The majority of literature reviewed made use of quantitative methods to answer their research questions. Lecture recording as an educational technology is commonly approached from the cognitive perspective by literature. Sweller's cognitive load theory, and Mayer's cognitive theory of multimedia learning were observed often. Although these theories are more focused on multimedia, both theories explain the learning process and how it is understood, by using the principles of cognitive theories

and applying them to lecture recording. This research critically reflects on and rejects these approaches, to address the gaps that these approaches create. It does this by investigating the SAMR as model, to understand the integration of lecture recording to support teaching and learning.

As outlined above, the review of empirical studies guided the study to explore lecture recording and what it can offer, especially in relation to creating flexibility. Figure 2.2 shows McGarr's (2009) explanation of how lecture recording can supplement, substitute or enhance a lecture.

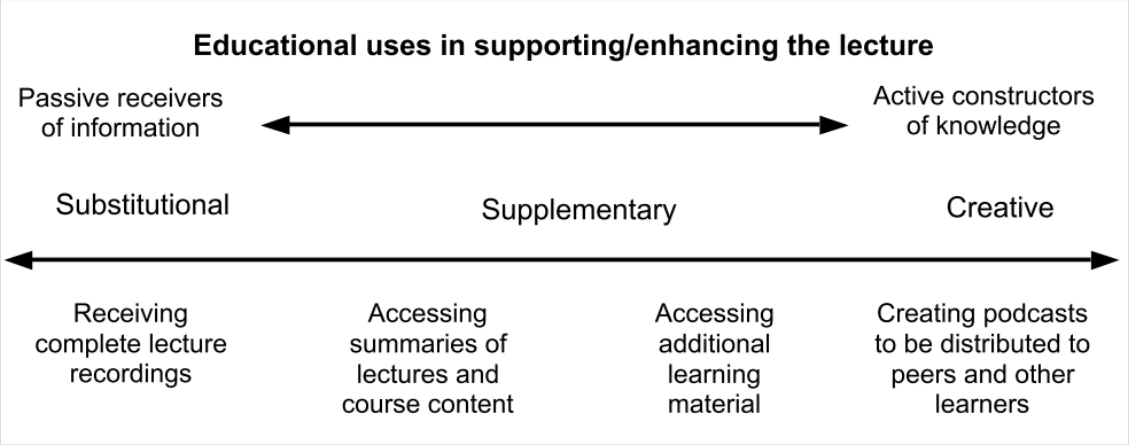



**Figure 2.2: McGarr's conceptualisation of supplementing, substituting or enhancing the lecture by means of lecture recording**

Source: McGarr (2009).

The depiction in Figure 2.2 provides an important explanation of the various dimensions involved, which must be considered when literature is consulted about the use of lecture recording. Lecture recording can be used for various objectives and, therefore, empirical studies need to be considered accordingly.

Using lecture recording involves various dimensions. Because it can be used to achieve various objectives, its value must be determined by alignment of desired outcomes. This important approach is also integrally complex. As reported in the empirical review (Section 2.3), most research fails to offer a clear definition of the theoretical framework or model that was used.

Phillips (2005) argues that the SAMR model is one of the most popular models in use, due to its simplicity and ease of use. Critics argue that the SAMR model, as a standalone and singular model for evaluating technology integration, is not sufficient (Hamilton, Rosenberg & Akcaoglu, 2016), mainly because of an absence of literature and context, and its rigid hierarchical nature.

This study argues that using Puentedura's SAMR model is sufficient, especially for the field of educational technology. The SAMR model was designed to help teachers reflect on how they integrate and use educational technologies in their teaching (Tsybulsky & Levin, 2016). The SAMR model's initial purpose is grounded in school education, however, recent years have seen the model being applied in higher education environments (Pfaffe, 2017).

Dividing and categorising key literature using the SAMR model assisted this study to identify whether flexible opportunities are more prevalent, and if it is linked to the levels and dimensions of Puentedura's (2006) model.

## 2.6 Conclusion

This chapter explored and defined key concepts that influence the understanding of the impact of lecture recording on students' performance, and how they use lecture recordings in their learning. Through an investigation of key concepts, and by linking those terms to specific empirical studies, the chapter provided context, which serves as an introduction for further inquiry. Methodological approaches were noted as being mostly qualitative, and this realisation assisted the researcher to understand the characteristics of past approaches. The limitations of quantitative approaches and mixed-method approaches were noted and will be discussed further in Chapter 3.

Chapter 3 will explore the research methodology used. The categorisation of the SAMR model assisted the study to create links between levels of technology integration and flexible learning opportunities.

# CHAPTER 3: RESEARCH METHODOLOGY

## 3.1 Introduction

The purpose of this study was to investigate the use of lecture recording to support opportunities for flexible learning and responsive pedagogical approaches. The chapter will offer details on the way this research was undertaken within the LLB degree of the UFS Faculty of Law. The Faculty of Law makes frequent use of lecture recording in its teaching and learning. Each and every lecture in the LLB degree is required to make use of lecture recording, regardless of a module's mode of provision.

This chapter will provide an overview of the methodology that was used to conduct this study. It will explain how the study was conducted by means of a mixed-method research methodology and design to explore and understand its research questions. The study's approach in relation to research orientation, type of research, research approach, detail pertaining to the selection of site and participants, data analytics, validity and ethical issues, along with the research procedure and schedule, will be discussed in this chapter.

## 3.2 Research orientation

Feilzer (2010) emphasises that the interpretation that presides within a research study must be done with the clear realisation and understanding that underlying philosophies and knowledge bias is ever present. As a researcher, I acknowledged and took into account that various perceptions and experiences influence and direct a research approach.

The study investigated the use of lecture recording and how it can create flexible learning opportunities. The study was located in an interpretive approach, which was developed as a critique of positivism in the social sciences. The interpretivist approach is also referred to as "post-positivism", because it constitutes a reaction to the positivist approach (Willis, 2007:336).

Cohen et al. describe the "central endeavor" of the interpretivist approach as the "world of human experience" (2007:21). The interpretive perspective holds the view that many and equally valid interpretations of a phenomenon rely upon time and specific context. Therefore, the interpretative perspective is based on a subjectivist

epistemology. Being located in an interpretive paradigm, the study observes and explores the reality of a phenomenon through the development of subjectivity that is based on social and environmental influences. Participants' views and meanings are investigated and explored, together with the researcher's affirmation of one's own background and bias, which shapes their interpretations (Creswell, 2014). Participants' and the researcher's social context, history and influence are, therefore, viewed as inseparable from knowledge pertaining to the study.

Lecture recording is used with great frequency, and its integration into the educational spheres is well documented (Adams et al., 2017). Lecture recording has been found to provide students and lecturers with an array of teaching and learning benefits, which contribute to successful completion of academic studies (Dona et al., 2017).

This study's investigations were focused on how lecture recording is used by students in the specific UFS law context and how it can be and is used to facilitate flexible learning opportunities. Students' and lecturers' reports on how they use lecture recording was investigated to gauge and understand technology integration and pedagogical approaches. Questionnaires, individual interviews and focus group discussions were employed as mechanisms to engage with individual experiences of participants who were involved in the study.

### 3.2.1 Faculty of Law lecture recording tools and context

Lecturers can choose one of three technological tools to record their lectures.

a) Blackboard Collaborate

Blackboard Collaborate is web-conferencing software that enables any lecture to be recorded or streamed live through an internet connection. The software allows for chat, video, audio, polling, file sharing and screen sharing, as added functions to the recording. See Figure 3.1.

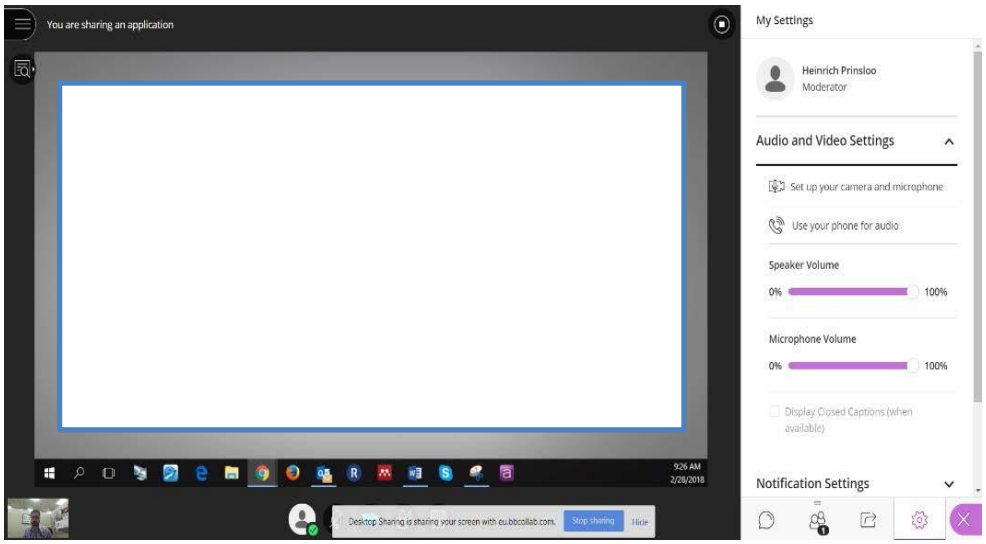



**Figure 3.1: Screenshot of Blackboard Collaborate used at the UFS**

b) Audio recorders

Audio recorders are devices, such as recorders or mobile phones, that are used to record audio during lectures. This type of recording is commonly referred to as podcasting in universal contexts. As discussed in Chapter 1, the majority of lecturers use audio recorders that have been specifically purchased by the Faculty of Law for the purpose of recording classroom lectures. See Figure 3.2.


**Figure 3.2: Photograph of audio recording device commonly used by UFS Faculty of Law**

c) Microsoft Office Mix

Office Mix is used as an add-on tool within Microsoft PowerPoint. Slide recording, screen recording and video/audio recording is possible without an active internet connection. See Figure 3.3.


**Figure 3.3: Screenshot of Office Mix**

### 3.2.2 Distributing lecture recordings

After an audio recording has been made, at the end of the lecture, the lecturer sends the audio recording to the instructional designer to upload to an internal content server. The recording is linked to the specific module in the online LMS environment, Blackboard. The Blackboard Collaborate lecture recordings are stored on a cloud that is automatically integrated with Blackboard. Office Mix videos are either uploaded to Blackboard by the lecturer him/herself or, if the file is too big, the video will follow the same process as the audio recordings that are saved to the internal content server.

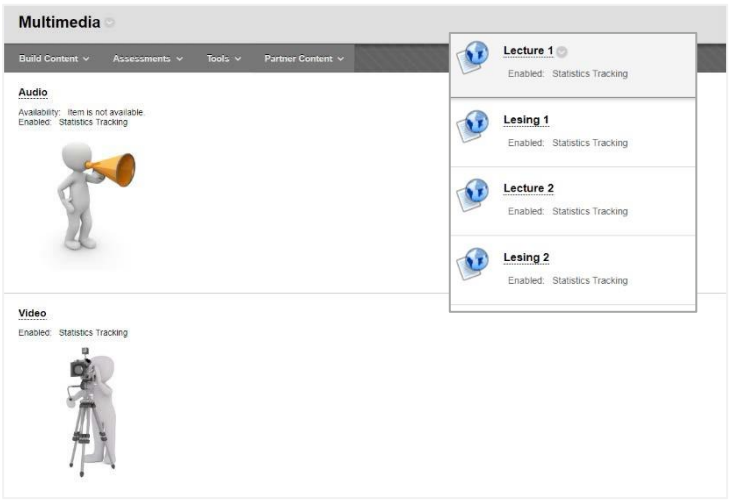



**Figure 3.4: Screenshot of a module "multimedia" commonly used in UFS Faculty of Law to distribute lecture recording**

## 3.3 Type of research: Mixed method

The researcher believed that using both qualitative and quantitative methods would provide rich data for an explorative inquiry that would shed light on the phenomenon of lecture recording, and how it can create opportunities for flexible teaching and learning. The combination of quantitative and qualitative data (mixed method) assumes that both forms of data provide information with unique value. Creswell (2014) argues that a mixed-method procedure offers a better understanding of the research phenomenon. Driscoll et al. (2007) define mixed methods as a research design that integrates qualitative and quantitative data through a change process. The mixing or blending of quantitative and qualitative research methods is claimed to be beneficial to a study, as it demarcates the potential shortcomings of each approach. By combining quantitative and qualitative approaches, the study aims to validate its efforts to understand the research questions and specific context better.

Bash, Mouton and Sapsford (2006) maintain that quantitative approaches are highly formalised through explicitly controlled statistical and numerical analysis. In contrast, Silverman (2006) argues that qualitative approaches are more inclined to use logically occurring data to find sequences explaining participants' meaning and, thereby, establish the characteristics of a specific phenomenon. Research can often be caught up in trying to differentiate between and generalise the strengths and weaknesses of qualitative and quantitative methods (Cooper et al., 2012). These authors challenge the qualitative-quantitative divide, by asserting that more value is contributed by each approach's overlapping features, than disseminating their differences does (Cooper et al., 2012). With this in mind, the study's combination of quantitative and qualitative methods as "mixed method" ensured that the benefits of both methods could be utilised, even though doing so entailed more detail and resources to answer research questions. Nevertheless, the complexity of the research phenomenon was better served by mixed methods, which made more detailed analysis possible.

The study, therefore, relied on both qualitative and quantitative data gathering methods to respond to the study's research questions. Interviews, surveys and focus group discussions were used. Data gathering was scheduled to gather opinions from a sample of participants, to identify trends in the broader student and lecturer cohorts, and to provide a detailed analysis through investigative interpretations.

## 3.4 Research approach

Several typologies for classification of mixed-method strategies exist (Creswell, 2014). The choice of this study's research strategy was based on the type of design best suited for the field of educational technology. Through the literature review described in Chapter 2 (see Appendix A for a summary), a range of research approaches were observed and referenced in decisions about ways to gather data for this study.

The mixed-method approach was used to explore how students and lecturers integrate lecture recording and the potential it has to create flexible learning opportunities in teaching and learning. By using a convergent parallel mixed-method approach, the study was able to compare and integrate data obtained from students and staff surveys, focus groups and individual interviews (Creswell, 2014). Creswell defines the purpose of a convergent parallel mixed method approach as using both data from quantitative and qualitative methods to achieve a result (see Figure 3.5).

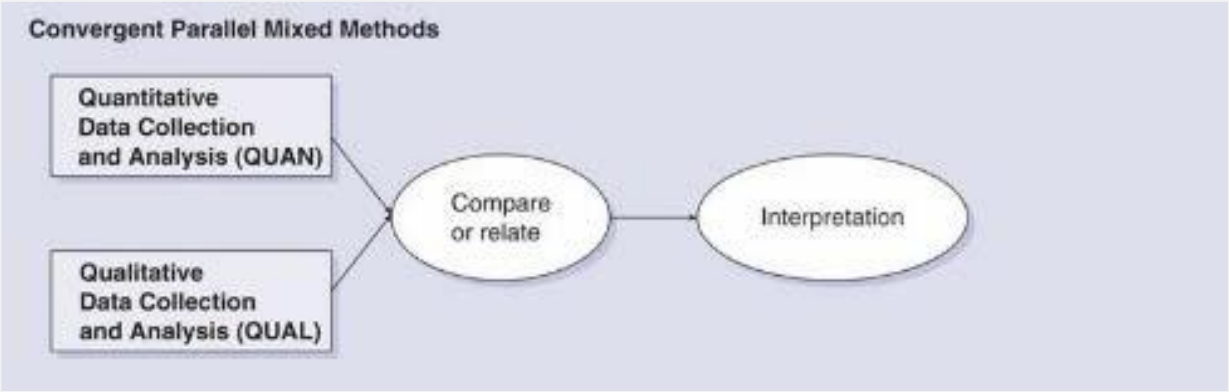



**Figure 3.5: Convergent parallel mixed methods**

Source: Creswell (2014).

The key assumption of the convergent parallel mixed approach is that qualitative and quantitative methods provide different types of data. After data collection, findings are compared for interpretation. Quantitative data is not a prerequisite for qualitative data, or vice versa. Both quantitative and qualitative data are used in the interpretation and conceptualisation phase. This approach assisted the study to develop and move beyond existing measures. Quantitative surveys were administered before interviews were conducted, and the latter provided depth and focus in the study. The mixed-methods approach was instrumental in refocusing some interview questions, by directing attention to specific interests.

## 3.5 Research process and data collection

### 3.5.1 Selection site and research participants

This section will provide details about the way lecture recordings are used in the Faculty of Law at a public South African university, and how participants were selected. Tashakkori and Teddlie (2010) describe data exploration as a key component of mixed-method approaches that aim to understand behavioural and social sciences. The study focused on investigating lecturers' and students' use of lecture recording in a specific module of the Faculty of Law at the UFS.

As reported in Chapter 1, I am an instructional designer at the UFS, and providing support to the Faculty of Law with their technology integration is part of my day-to-day work. The Faculty of Law makes use of lecture recording on a regular basis, which forms part of a compulsory addition to each undergraduate module. The Faculty distributes hundreds of lecture recordings per semester for two different modes of provision.

The selection of the module for the research was based on the diverse attributes of the course programme of the LLB degree. The module is not an elective, and all students must complete the module in order to complete the course programme of the LLB degree. These details ensured that students and lecturers involved in or linked to the module LLAW 2624* were from a variety of backgrounds and that all students had experiences of lecture recording before they participated in the research. By selecting the module LLAW 2624*, the researcher ensured that the study's scope reached students who had already taken a minimum of 15 other modules in their LLB degree programme, regardless of their mode of provision or year of study.

A total number of 429 students were enrolled for the module LLAW 2624*. The same lecturer presents the module to campus-based students and online students. The module is divided into LLAW 2624* ON (for campus-based students) and LLAW 2624* OFF (for online students), and lectures for the different groups are presented at different times. In total 393 students were enrolled for the campus-based mode, and 36 for the online, distance learning mode. There are 27 lecturers involved in teaching

and facilitating the LLB course programme overall. All 27 lecturers are responsible for both on-campus and online, distance lectures of modules. Student participation in the study amounted to 14.7% (N=66) and lecturer participation amounted to 29,6% (N=8).

The module LLAW 2624* was analysed, through the use of a module analysis process where the technology tool were categorized and information gathered from the online module, prior to the administration of the survey and interviews. The module makes frequent use of lecture recording. The LLAW 2624* ON campus-based module consisted of more than 14 recorded lectures, and the LLAW 2624* OFF online module had 27 recorded lectures.

After obtaining ethical clearance and lecturer consent, the researcher developed an online site on the LMS, Blackboard, to invite, share and orient students and lecturers regarding the research (Appendix J). The online site was called Lecture Recording Research 2017– 2018. Research participants were invited by e-mail announcement onto the LLAW module (Appendix B) to participate in the study. A short description provided below of folders/items and information that were shared on the online site to ensure transparency between researcher and participants. This enabled participants to understand the intentions of the research and to participate in surveys, interviews and correspondence voluntary. Students were informed that they would give consent by clicking on the survey link. All invitations and survey links were sent using the LLAW e-mail announcement function. This ensured that participants were guided through information about the study at all times.

Prior to agreeing to participate, all participants received information via an e-mail announcement about who the researcher is and what the research would be about. Once participants had indicated their interest via e-mail, they received details and resources via e-mail and telephone correspondence, as needed. All participants gave consent to be interviewed, or to participate in a survey or focus group. The research site included digital copies of the deployed survey, consent forms, information sheets and interview guides, to ensure that information regarding the research process was freely available, without restrictions. Research participants were also given the option to withdraw from the study.

### 3.5.2 Data collection

The qualitative data of the study was gathered through telephone interviews and

individual and focus groups. The quantitative data was gathered through online surveys.

These data collection methods ensured that qualitative and quantitative data were gathered, so that the use of lecture recording and how it creates opportunities for flexible learning and teaching could be explored. Different contextualisation and scenarios were used for students and lecturers; this was done to ensure that the data collection instruments used terminology and contexts that each group of participants could identify with. Exploration of student and lecturer perceptions about the use of lecture recording collectively was rarely observed in the empirical review. The study, therefore, placed much emphasis on exploring student and lecturer perceptions separately, as well as their collective use of lecture recording, in order to achieve deeper understanding, interpretation and recommendations.

### 3.5.3 Research with students

#### a) Student surveys

The online site was used to invite student participants to complete a digital survey (Table 3.1). An e-mail announcement was sent using the online site, to encourage students to participate in the survey. The student survey e-mail announcement invitation was sent a total of eight times in 2017 and 2018. Students were observed, either at the end of their academic year of study (2017), or at the start (2018). The research study struggled to engage students to complete the surveys. Another reason for failure to persuade students to participate was other surveys taking place in the Faculty at the end of 2017 and involving students, e.g., module evaluations. Furthermore, students were also in the middle of exams at end of 2017.

**Table 3.1: Data collection instruments used to collect data from students**

| Types of data | Method | Instrument | Date |
|---|---|---|---|
| Quantitative & Qualitative | Student survey | Online survey<br>- Closed questions<br>- Open ended | 10 October 2017 to 31 January 2018 |
| | | | April 2018 |
| Qualitative | Student telephone interviews | Semi-structured & open-ended | 9 to 16 January 2018 |
| | Student focus groups | | 19 & 22 February |

The student survey was created using the SAMR model as guide (see Appendix E). Lecture recording experiences and questions were linked to the four levels of technology integration, namely, substitution, augmentation, modification and redefinition.

The survey determined participants' mode of provisioning, course programme, device preference and overall preferences regarding lecture recording and flexibility. The student survey consisted of 22 questions. Five closed-ended questions (1–4 and 10) were used to gauge student opinions and preferences regarding lecture recording based on certain choices.

**Table 3.2: Four levels of technology integration (SAMR model) – Students**

| Four levels of technology integration (SAMR model) | Student survey questions relating to this level |
|---|---|
| Substitution | Two open-ended questions (5 and 21) were used to gauge whether substitution and/or redefinition were present in student experiences of lecture recording. Three questions (5, 6 and 11) were directly linked to substitution. |
| Augmentation | Four questions directly identified whether participants engaged with lecture recording on a level indicating augmentation (7, 9, 14 and15). |
| Modification | Modification as a technology integration level was investigated by questions 16, 17 and 18. |
| Redefinition | Two open-ended questions (5 and 21) were used to gauge whether substitution and/or redefinition were present in student experiences with lecture recording. Redefinition was indicated through the completion of questions 20 and 21. |

b) Telephonic interviews

Telephonic interviews were conducted with 10 students who had completed the digital survey. Telephone conversations were recorded with a voice recorder app that records telephone conversations from the side of the caller and the receiver. Telephone interviews were guided by the interview guide (see Appendix F). Detailed transcriptions of recordings were used to code and categorise the details of participants' responses. Questions during the telephone interviews were centred on SAMR technology integration levels, students' preferences and their views regarding flexibility. The students interviewed included both campus-based and online students.

c) Focus groups

Student focus groups were established by invitation on the online site through e-mail announcements. Participants were invited to participate in a focus group interview with the title, 'Lecture Recording, Pizza and Me' (see Appendix G). This approach was taken to encourage students to participate in a friendly and open environment. Students indicated through e-mail responses whether they could attend. Two student focus group sessions were conducted, on 19 and 21 February 2018. The sessions were recorded and transcribed, so that coding of data and categorisation of SAMR technology integration could be achieved. The first focus group had three participants and the second focus group had eight participants.

Table 3.3 indicates the timeline for gathering student data.

**Table 3.3: Student data gathering timeline**

| Date | Count | Research tool | Event |
|---|---|---|---|
| 18 October 2017 | N=20 | Survey | Survey distributed to students through Blackboard organisation announcement – 20 students completed the survey |
| 20 November 2017 | N=12 | Survey | Announcement was distributed for the 2nd time – 12 students completed the survey |
| 30 November 2017 | N=3 | Survey | Announcement was distributed for the 3rd time – 3 students completed the survey |
| 9-16 January 2018 | N=10 | Telephone interviews | Due to the time of the year and students having left campus, telephone interviews were conducted with 10 students who had completed the survey |
| 16 January 2018 | N=0 | Focus group | E-mail invitation to all participants who had completed the survey, but who had not been part of the telephone interviews, to participate in a focus group – no students attended |
| 31 January 2018 | N=7 | Survey | Survey distributed to the rest of the students who had not completed the survey via email – 7 students completed the survey |
| 19 February 2018 | N=3 | Focus group | E-mail invitation issued to all participants on a Blackboard organisation, to participate in a focus group – 3 students participated |
| 21 February 2018 | N=8 | Focus group | Phoned students who had signed up for the focus group, but who had not attended, and arranged a new time, on 22 February. Also asked them to invite fellow law students in their class to accompany them – 8 students attended |

### 3.5.4 Research with lecturers

#### a) Lecturer survey

The online site was used to invite lecturer participants to complete the survey. An e-mail announcement was distributed to encourage staff to participate in the survey. The lecturer survey invitation was issued a total of five times throughout 2017–2018.( see staff timeline in Table 3.4). The survey was completed by eight staff members.

The staff survey was created with the SAMR model as conceptual framework in mind. Experiences with lecture recording from a pedagogical perspective were linked to the four levels of technology integration, namely, substitution, augmentation, modification

and redefinition. The staff survey consisted of 16 questions: five open-ended questions (4.1 – 4.5) were used to gauge various SAMR levels and/or pedagogical experiences with lecture recording, and seven closed-ended questions (2.1, 2.3, 2.5, 2.7, 2.9, 2.11 and 2.13) were used to gauge lecturers' opinions and preferences regarding lecture recording and flexibility. Six questions (3.1 – 3.7) were directly linked to the levels of SAMR. The survey explored participants' teaching preferences, experiences and expectations with lecture recording, and views regarding flexibility.

b) Individual interviews with lecturers

The study engaged with three lecturers through face-to-face individual interviews. The arrangements of interviews were made through e-mail invitation and telephone correspondence. Interviews were conducted in 2018, as most staff were on leave or out of the office during November 2017–January 2018.

Conversations during the interviews were recorded and guided by the interview guide (Appendix F). Verbatim transcriptions of recordings were used to code and categorise the details of participant responses. Questions during the interviews were centred on SAMR technology integration levels, pedagogical preferences and lecturers' views regarding flexibility.

Table 3.4 indicates the timeline according to which data was gathered from lecturers.

**Table 3.4: Lecturer data gathering timeline**

| Date | Count | Research tool | Event |
|---|---|---|---|
| 24 November 2017 | N=4 | Survey | Survey sent to lecturers students through Blackboard organisation announcement – 20 students completed the survey |
| 28 November 2017 | N=1 | Survey | The announcement was distributed for the 2nd time – 12 lecturers completed the survey |
| 4 December 2017 | N=0 | Survey | The announcement was distributed for the 3rd time – 3 lecturers completed the survey |
| 30 January 2018 | N=0 | Survey | Due to the time of the year and lecturers being off campus, telephone interviews were conducted with 10 lecturers that completed the survey |
| 12 February 2018 | N=3 | Survey | E-mail sent out with invite to all participants on organization to come for a Focus Group – 3 lecturers came |
| April 2018 | N=3 | Individual face-to-face interviews | E-mail invitation and telephone correspondence sent to lecturers to request an interview with them |

## 3.6 Data analysis

Merging two data sets gathered from the quantitative and qualitative methods offers different perspectives from the same group of participants, and serves to deepen the exploration of the research questions.

In this study, qualitative and quantitative data analysis took place separately. The data analysis of this study involved analysing participant information, coding the data, doing thematic analysis of the descriptions that lead to the coding, and interpreting the findings. The coding or “labels” that were assigned were aligned to the relationships they had to the SAMR model’s basic level descriptors, namely, substitution, augmentation, modification and redefinition. Thematic analysis typically occurred according to Gordon’s three levels of flexibility, as described in Tables 3.5 and 3.6.

**Table 3.5: Gordon's three levels of flexibility**

| **Student Theme: How do you use lecture recordings in your learning?** | | | |
|---|---|---|---|
| Codes<br>S-substitution | Codes<br>A-augmentation | Codes<br>M-modification | Code<br>R-redefinition |
| Well, I use it for the lectures, you mean like, what, what method do I use, or what? It's mainly for the lectures recordings,<br><br>I download them after they've been posted; these are the recordings that are uploaded, then you download them and then after I've gone through the work, then I listen to the recordings and I go through the recordings to make sure that I understand the work that I've read. | Now I'm starting something brand new, right ok so opened up the audio and I sit and I listen to the material. But I would used to, and it's just it's just a personal thing. That maybe I just need to be trained, I would never rely on that totally, so I listen to it and then I have to refer to my study guide, or to the textbook, or whatever. And then I'm reassured.<br><br>I attack a lecture recording, and then I go through the content that was discussed and it makes it easier that way. Or go through the content while I'm listening to the audio. | k, I think that is a personalised thing. I think everybody's got his own method of learning. What I do is I try to get ahead in terms of, my own preparation, and then, I like to make notes, my own notes of each and every module that I do. And, uhm, once I've done that I mark certain areas that are, not that clear, that needs a bit of clarification. Then I listen to the, recording, and in most cases, I would say in the majority of cases, the lecturers do give a bit of clarification on the more difficult issues, and that is highly appreciated. But as I say, then, once again, you get these guys who's basically just reading from the textbook and that doesn't help at all. | I actually go and study the work I'll take the lecture recording and the PowerPoint as well that they usually give us and study guide and I will sit and listen and go through the lecture again and I will check if there was something I missed if there's any questions that I couldn't understand I will mark and I will make sure that I get to a lecture if I didn't understand that and then from there, I will actually go and study the work on my own. |

**Table 3.6: Example of how coding was applied and used**

| Definition of lecture recording | The role of lecture recording in teaching | The role of lecture recording in learning |
|---|---|---|
| SAMR | SAMR | SAMR |
| Uhm, from what I've read, that's much more successful, it can be much more successful than just a mere lecture recording. So, lecture recording, for me, is rec… a mere recording of the lecture regardless of where it took place. | ... initially I thought that it might dampen the spontaneity a little bit of the lecturer and you might be a little bit reserved about saying stuff that you normally would have done in class because of the fact that you might be afraid that it might be loaded up and listened to and understood differently and out of context by... | ... they don't find this any different than coming to class; they see no up or down to it. Then, there's always a few who complain about data usage and inability to connect, internet problems; but the vast majority of students who participate in online teaching... |

Tables 3.5 and 3.6 indicate that codes often overlapped. Most qualitative data indicated more than one code from each response, due to the SAMR model's hierarchal status: Redefinition cannot occur without some form of substitution, augmentation and modification. Because data overlapped, classification was assisted by colour coding.

Due to the data overlap and complexity, the study made use of NVivo, which is a qualitative computer data analysis software program, to analyse the qualitative student and staff interview data. An external transcriber was used to transcribe all recoded audio to text. Categories and groupings of information was gathered from the data through the use of existing theoretical underpinnings of the SAMR model and axial coding. Corbin and Strauss (2015) explain that axial coding identifies categories in data and position them according to an existing theoretical framework.

Qualitative data and quantitative data were, therefore, labelled according to four categories, as set out in Table 3.6: Substitution, Augmentation, Modification and Redefinition. All four key categories were linked and associated in relation to the research phenomenon of lecture recording and its potential to create flexible opportunities.

The context and structural conditions of lecture recording as educational technology are difficult to disseminate, and criticism of axial coding's highly structured process

was taken into consideration. The study argues that, due to the overlap of data, the structure and rigidity of axial coding would be most beneficial for data dissemination.

### 3.7 Ethical considerations and researcher's positionality

Cohen et al. (2007:408) regard ethical considerations as an important part of any researchers' foundation, regardless of their ontological preference or research method. Throughout the different phases, the study ensured that structured and conscious decisions and considerations were made with regard to ethics. Through telephone, e-mail and face-to-face correspondence, the researcher emphasised the contractual relationship between the researcher and participant. Copies of agreements and availability of transcripts on request from participants was an important principle adhered to during the research process.

The research views ethical principles as an integral part of each topic . Processes of the research and consideration of ethics were regarded as essential at the beginning and end of each phase in the study.

The research struggled to get student participants to participate in interviews and surveys. As explained in the application for ethics approval, participation was voluntary and data was kept completely confidential. This ethical consideration proved to be extremely challenging, as eliciting participation from students proved to be difficult.

Involvement in research tasks always carries the risk of bias (Creswell, 2014). The researcher, as an instructional designer, was conscious of his positionality and obligatory responsibility during the research. The researcher's involvement in distributing lecture recordings and training lecturers to use lecture recording was acknowledged as a possible interference, especially in relation to interviews. The researcher asked a female colleague to conduct the telephonic interviews after doing one himself and sensing that the students felt more comfortable to answer questions posed by a female. The researcher also ensured that interviews were guided by the interview questions set prior to the actual interview. The researcher prepared the additional interviewer to conduct the interviews by training her on how to do audio recordings on the telephone used, as well as on how the interview guide works.

The researcher was also conscious that staff interaction would involve specific bias,

due to familiarity that is caused by day-to-day operations and the researcher being

both the instructional designer and a researcher. Care was taken to ensure that the interview guide was followed, while still allowing personal interaction and flow during interviews.

## 3.8 Validity

Maxwell (2008:281) explains that the understanding of theory and the intellectual traditions of a research study will have implications for the threats to validity a researcher needs to consider. In order to demonstrate and establish validity in this study, the following principles proposed by Morse et al. (2008) were used as guide.

*Credibility:* Interpretive validity is concerned with credible interpretation of the words and actions of participants in a study (Maxwell, 1992). The research validated its findings from the words and actions of participants by cross referencing with quantitative (surveys) and qualitative methods (interviews). Through consideration of the context of the data, the research ensured that it approached research questions from different angles, while maintaining responses as valid through its connection.

*Transferability:* The data that was gathered will be of interest mainly to higher education institutions and, therefore, the research will aim to transfer results only to the specific setting and context of the UFS. Generalisation of data will occur according to Maxwell's triangulation method (Maxwell, 1992). Triangulation involves using one main data source in order to limit and reduce potential bias.

*Dependability:* The researcher was aware that research about student preferences for lecture recording tools exist. This research took into account the unique South African context, and that context is closely related to socio-economic circumstances. The researcher describes the context in which the study was done, and was guided by his supervisors. All participants were invited to review or amend their responses if they felt the need to do so.

*Confidentiality:* Strategies to ensure that the research data and findings are kept safe and private was validated through confidentiality. Documents relating to data analysis and collection was stored and distributed through password-protected systems to ensure privacy. Participants were constantly reminded of their confidentiality and privacy, and that participation was completely voluntary. Capturing data for the digital survey using third-party software (Evasys) created an unbiased environment, as the

data was not linked to student profiles. The data gathered was treated with a respect for privacy and anonymity.

## 3.9 Research procedure and schedule

Research and investigation relating to this study took place in 2017–2018. The lecturers and students were involved in the research project from October 2017 to March 2018, as indicated in Table 3.7.

**Table 3.7: Research project timeline**

| Date | Activity |
|---|---|
| January – March 2017 | Obtaining an overview of study and phenomenon investigation |
| April – July 2017 | Literature review |
| October 2017 – March 2018 | Invitation and selection of participants |
| April – June 2018 | Findings and data analysis |

## 3.10 Conclusion

The chapter covered the following sections:

*Research orientation:* The study is located in an interpretive approach, which allowed for individual experiences to be investigated and understood better.

*Type of research:* The study made use of both qualitative and quantitative methods, in a mixed-method approach. A combination of quantitative and qualitative data offered deep exploration of data in relation to the research questions possible.

*Research approach:* The research used a convergent parallel mixed-method approach, which used data from both quantitative and qualitative methods to obtain a result. This approach affirms that qualitative and quantitative methods provide different types of and contributions to data.

*Research process and data collection:* This section explored how the research deployed and engaged with lecturer and student participants through the use of online surveys, telephone and face-to-face interviews.

*Data analysis:* Qualitative and quantitative data analysis occurred separately. The data analysis of this study involved analysing participant information, coding the data, doing thematic analyses of the descriptions disseminated from the coding, and interpreting the findings. The coding or “labels” that were assigned were aligned to the relationship they had with the SAMR model’s levels of integration, namely, Substitution, Augmentation, Modification and Redefinition.

*Ethical consideration and researcher’s positionality:* This section explained ethical considerations that were applied throughout the various phases of the study. Consideration of and challenges regarding the researcher’s position in the study was as discussed.

*Validity:* Principles of and guidelines for how the study aimed to achieve validity was described in this section.

*Research procedure and schedule:* A schematic representation was offered regarding the study’s schedule and procedures for data collection and analysis.

# CHAPTER 4: UNDERGRADUATE LAW STUDENTS' INTEGRATION OF LECTURE RECORDING FOR FLEXIBLE LEARNING

## 4.1 Introduction

This chapter will use the lens of SAMR to analyse student data that was gathered from online surveys, telephone interviews and focus groups to investigate how undergraduate students integrate lecture recording to achieve flexible learning. As discussed in Chapter 2, students' integration of lecture recording in dual-mode settings is not well understood yet, particularly in the local context.

The first part of this chapter will offer an analysis of survey data to provide an overview of the quantitative data. The second section will hone in on students' reported learning experiences and use of lecture recording, by drawing on interview and focus group data. Lastly, the chapter will conclude with a discussion of how students integrate lecture recording in their learning and how this enables or constrains opportunities for flexible learning.

## 4.2 Quantitative data analysis and findings

This section will report on findings from three parts of the survey.

### 4.2.1 Context and background of student participants

As discussed in Chapter 3 (see Table 3.1), the academic programme from which participants were selected, was the LLB undergraduate degree of the Faculty of Law. Of the 429 students enrolled in the module LLB2724, 45 students participated in the quantitative survey (Appendix E). Of these 45 students, 30 were campus-based students and 15 of the student respondents were enrolled for the online distance-learning mode. This translated to 66.7% of students that participated having the opportunity to attend face-to-face lectures, and 33.3% being acquainted with online-only lectures. While the medium of instruction is English only, a minority of the students were English first-language speakers. Of the participants, nine reported that they had accessed online recorded lectures or seminars prior to their studies at the UFS, and 36 of them had never previously accessed online recordings for educational purposes.

Some students who do not have funding, take up employment and enrol for full-time online studies.

### 4.2.2 Student preferences when using the lecture recordings

Students reported using a range of devices to access and engage with lecture recordings (see Table 4.1), including laptops, mobile phones, tablets, and personal computers in university laboratories or at home. Laptops were the devices used most often, followed by mobile phones. Few students made use of tablets or desktop computers. Nearly half the campus-based students used the computer labs on campus to access lecture recordings.

**Table 4.1: Devices campus-based and online students used to access lecture recordings**

| **Devices** | ***Campus-based students (N=30)*** | ***Online students (N=15)*** | ***Total*** |
|---|---|---|---|
| *Laptop* | n=27 (90%) | n=14 (93%) | n=41 (91%) |
| *Mobile phone* | n=17 (57%) | n=6 (40%) | n=23 (51%) |
| *Tablet* | n=9 (30%) | n=4 (27%) | n=13 (29%) |
| *Computer lab* desktop computer | n=14 (47%) | n=2 (13%) | n=16 (36%) |
| *Home desktop* computer | n=4 (13%) | n=3 (20%) | n=7 (16%) |

The digital survey indicated that 91.1% (n=41) of participants used laptops, 51.1% (n=23) used mobile phones, 28.9% (n=13) used tablets, 35.6% (n=16) made use of the computer labs on campus and 15.6% (n=7) made use of home desktop computers to access lecture recordings. Device preferences among campus-based and online students are fairly similar for these two cohorts, with only the use of computer labs being more prevalent among campus-based students, for obvious reasons.

The survey asked participants about whether they preferred recorded or face-to-face lectures (see Table 4.2). The majority of campus-based students were neutral (n=18), while 10 participants agreed and 7 strongly agreed with the statement, “I prefer my

lectures to be an audio or video recording instead of a face-to-face lecture presented in class"; a further 6 students disagreed and 4 strongly disagreed with the statement. A large portion campus-based participants were neutral in their response to this question in comparison to online students.

**Table 4.2: Student responses to the statement, "I prefer my lectures to be an audio or video recording instead of a face-to-face lecture presented in class"**

| **Options** | ***Campus-based students (N=30)*** | ***Online students (N=15)*** | ***Total*** |
|---|---|---|---|
| *Strongly agree* | n=4 (13%) | n=3 (20%) | n=7 (16%) |
| *Agree* | n=4 (13%) | n=6 (40%) | n=10 (22%) |
| *Neutral* | n=14 (47%) | n=4 (27%) | n=18 (40%) |
| *Disagree* | n=5 (17%) | n=1 (7%) | n=6 (13%) |
| *Strongly disagree* | n=3 (10%) | n=1(7%) | n=4 (9%) |

Five campus-based students disagreed and three strongly disagree that they preferred lectures to be an audio or video recording instead of a face-to-face lecture, while four strongly agreed. This suggests a considerable variation in preference among campus-based students. Though online-based students do not have the option to attend face-to-face classes, two students indicated a preference for face-to-face lectures.

Students were asked whether having access to lecture recordings online would affect their lecture attendance. Campus-based and online student respondents had different experiences; nevertheless, the survey included the opinions of online students, even though few online students attended classes (see Table 4.3).

**Table 4.3: Student responses to the statement, "Having lecture recordings online would affect how often I attend class"**

| ***OptionsScales to choose from:*** | ***Campus-based students (N=30)*** | ***Online students (N=15)*** | ***Total*** |
|---|---|---|---|
| *Strongly agree* | n=4 (14%) | n=0 (0%) | n=4 (9%) |
| *Agree* | n=15 (50%) | n=2 (13%) | n=17 (37%) |
| *Neutral* | n=2 (7%) | n=8 (53%) | n=10 (22%) |
| *Disagree* | n=4 (14%) | n=3 (20%) | n=7 (16%) |
| *Strongly disagree* | n=5 (17%) | n=2 (13%) | n=7 (16%) |

Students' responses indicate that class attendance and the availability of lecture recordings influenced class attendance. The data suggests that online students were uncertain whether, if they had a choice, it would affect their class attendance: Four strongly agreed, 17 agreed, and 14 disagreed and strongly disagreed with the statement. The large proportion of neutral statements in the two groups of students suggests that students are unsure, so they agree, because they are worried the recordings will be stopped – this is the researcher's position.

### 4.2.3 Student views about lecture recording and flexible learning

The majority of campus-based and online-based students agreed that lecture recording enables a more flexible learning experience, with 19 students strongly agreeing, 18 agreeing, five being neutral about the statement and only three students disagreeing (see Table 4.4).

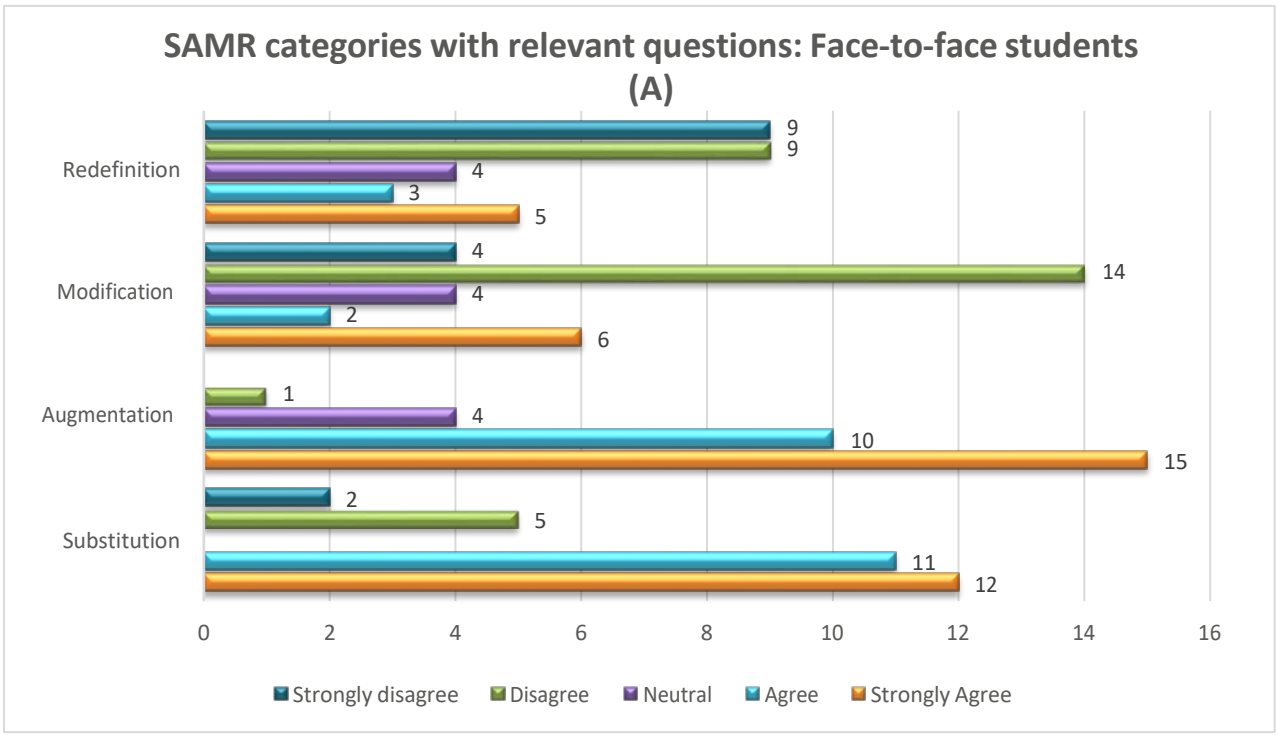
**Table 4.4: Student responses to the statement "I think lecture recordings allow me a more flexible learning experience"**

| ***Option Scales to choose from: Option*** | ***Campus-based students (N=30)*** | ***Online students (N=15)*** | ***Total*** |
|---|---|---|---|
| *Strongly Agree* | n=10 (33%) | n=9 (60%) | 42% |
| *Agree* | n=14 (47%) | n=4 (27%) | 40% |
| *Neutral* | n=4 (13%) | n=1 (7%) | 11% |
| *Disagree* | n=2 (7%) | n=1 (7%) | 7% |

## 4.3 Interpreting the quantitative data through the SAMR lens

### 4.3.1 An overview

As discussed in Chapter 3, the SAMR model was used to categorise the way students reported integrating lecture recordings as part of their studies. Lecture recording, when viewed through the lens of the SAMR model, illuminates examples of substitution, augmentation, modification or redefinition that assisted me to understand the integration of lecture recordings from a student perspective better. Survey questions were categorised, using SAMR, to provide detail about the integration of lecture recordings from a student perspective. Questions about lecture recording were divided into four categories (see Table 3.2 – table of questions and their SAMR categories).



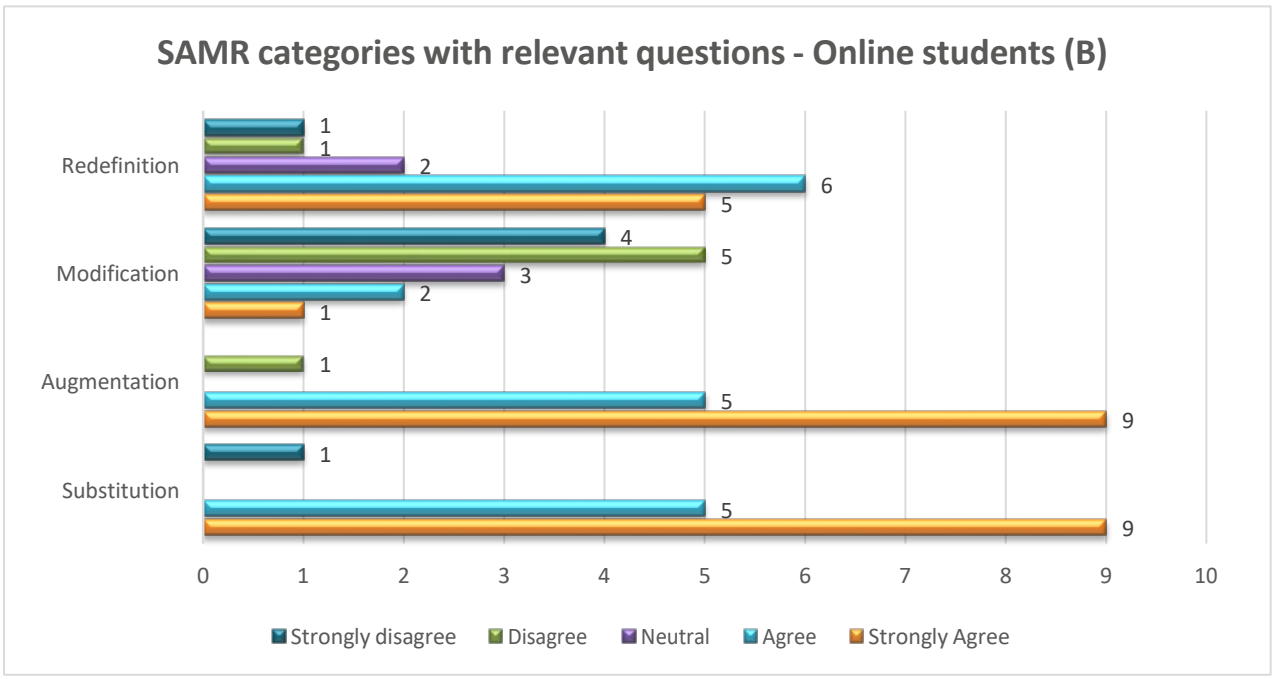




**Figure 4.1: Reported integration by SAMR categories among campus-based (A) and online students (B)**

**Table 4.5: SAMR categories with relevant statements from the student survey**

| | | |
|---|---|---|
| Substitution | *I download lecture recordings and replay them offline* | *Question 2.6* |
| Augmentation | *Access to lecture recordings help me to better revise my work, than I would with only face-to-face lectures* | *Question 2.3* |
| Modification | *I often rewind, replay or review an audio or video recording, because I lack the vocabulary or do not understand certain words or sentence constructions* | *Question 2.5* |
| Redefinition | *I would prefer all my class lectures to be online as lecture recordings and face-to-face class to be used for discussions, tutoring and other learning activities* | *Question 2.10* |

Substitution: As seen in Table 4.5, the substitution categorisation of lecture recording integration was focused around whether students download and view lecture recordings offline. The majority of students make use of lecture recordings at a substitution level, with 21 students agreeing strongly that they download and view lecture recordings offline; a further 16 agreed, five disagreed and three strongly disagreed with the statement.

Augmentation: Table 4.5 also provides data relating to lecture recording integration as augmentation. Students' feedback pertaining to how they make use of lecture recording as a revision tool was used to gauge whether augmentation took place. As seen in Table 4.5, students overall indicated that they integrated lecture recording as a revision tool: 24 agreed strongly, 15 agreed, four were neutral and two disagreed with the statement.

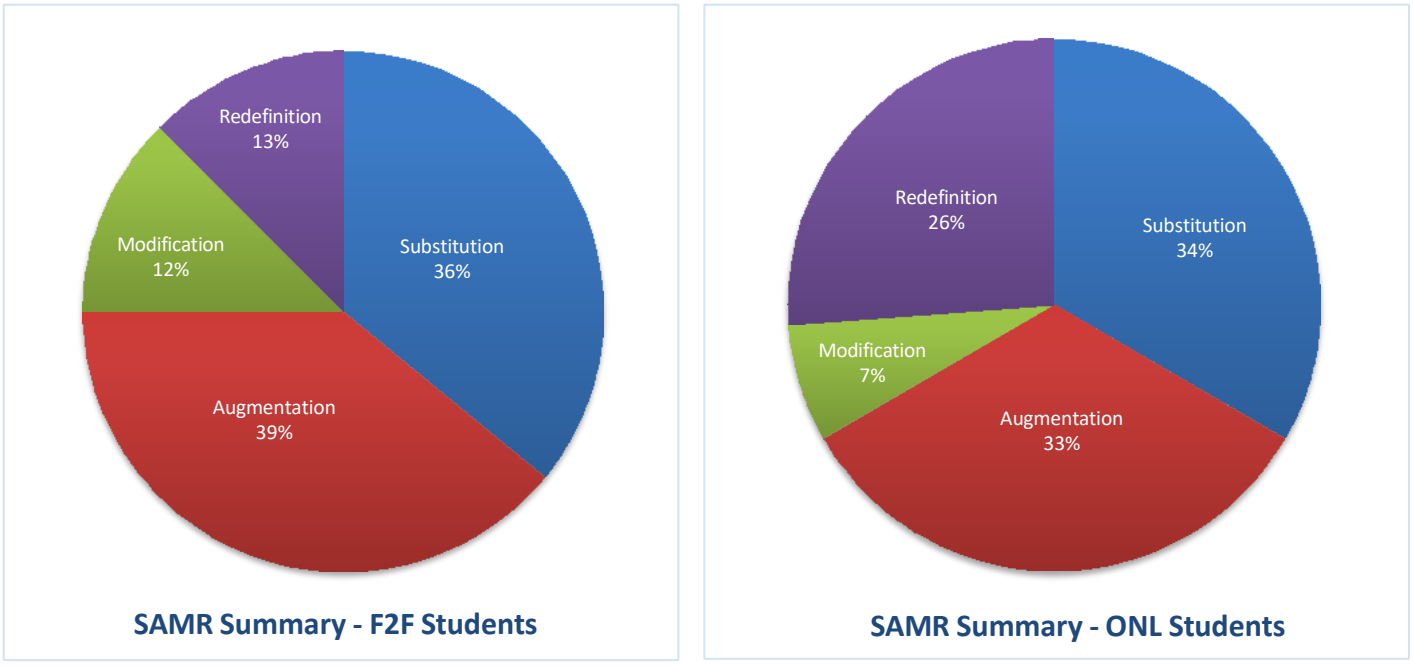
Modification: Modification relating to lecture recording integration was gauged by students' use of lecture recording as a revision tool that provides possibilities not offered by face-to-face lectures. In order to determine whether modification occurred, students had to indicate whether lecture recording was used to rewind, replay and

understand certain words or sentence constructions better. The majority of students indicated that they were not integrating lecture recording at this level, with only seven students strongly agreeing, four agreeing, seven giving neutral responses, 19 disagreeing and eight strongly disagreeing. This response was not anticipated, as lectures were being presented in English, and the majority of students were not first-language English speakers; the researcher expected that modification would be more widespread.

Redefinition: Redefinition as a SAMR level indicator was gauged in the survey by students indicating that they would prefer lecture recordings to be available online, and face-to-face lectures to incorporate discussions, tutoring and other learning activities. The responses varied, with 10 students strongly agreeing, 9 agreeing, 6 being neutral, 10 disagreeing and 10 strongly disagreeing.

### 4.3.2 SAMR overall summary

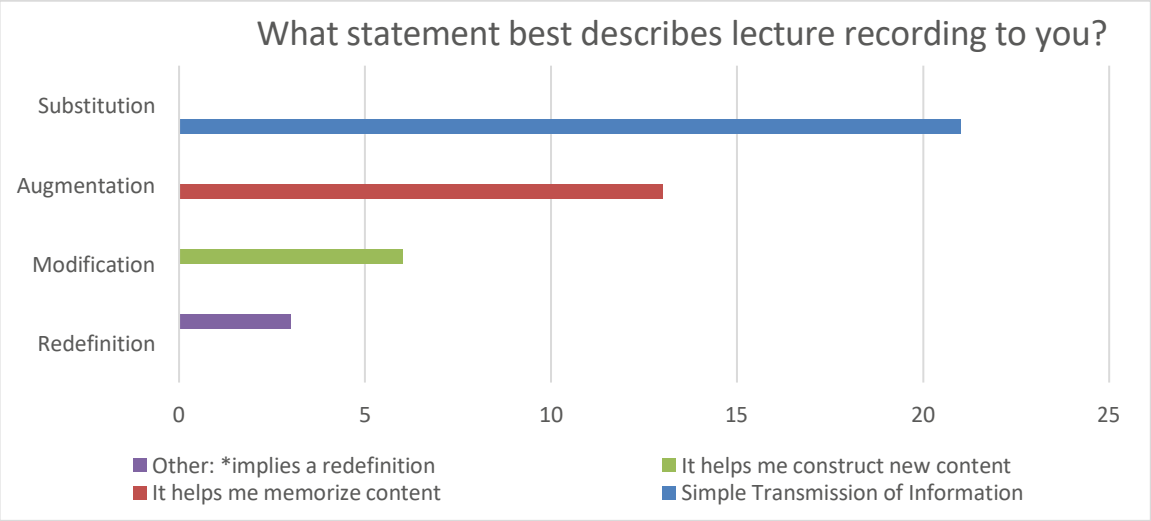
Students generally agreed about using lecture recordings for augmentation or substitution. The use of lecture recording as redefinition and modification was selected much less frequently, as indicated in Figure 4.2.




Legend: F2F – face-to-face; ONL – online

**Figure 4.2: Summary of SAMR categories selected by campus-based and online students**

Students were asked a follow-up question, in order to define or categorise lecture recording (see Figure 4.3). Doing so was important, so that I could gauge students' understanding of the SAMR categories. Note that redefinition as an integration level descriptor is a much more difficult category to categorise, as it is usually characterised by with variable uses and applications of lecture recording and is student-specific.




*Other: student feedback "other" was evaluated and the data indicated that "other" referred mostly to lecture recording being categorised as redefinition.

**Figure 4.3: SAMR as per guided definition**

When students are asked to identify, define or categorise lecture recording integration, the data that was collected indicates throughout this section that substitution was the most frequent and most popular choice of categorisation. Substitution is followed by augmentation as a level indicator for the integration of lecture recording. Though modification and redefinition are present and associated with lecture recording integration by students, it was not understood or described well, and was mostly based on individual perspective and context.

The survey data revealed broad integration patterns, but deeper insight through qualitative inquiry was needed to explore these dynamics further.

## 4.4 Qualitative data analysis and findings

### 4.4.1 Introduction

This section will offer an analysis of student data gathered from telephone interviews (INT) and focus groups (FG1 & FG2) (See Appendix I). Bash et al. (2006) argue that, in exploratory research, interviews can provide in-depth insight and comprehension opportunities for understanding phenomena. As discussed in Chapter 3, the study investigated lecture recording in more depth, by using a mixed-method approach. The use of telephone interviews and face-to-face focus groups assisted in providing a better understanding of how lecture recording is integrated and perceived by students.

Telephone interviews with students were done with a total of 10 students, who answered deeper questions about the way they value lecture recording in their learning process. Of these students, five were campus-based and five were online students. In the interviews it was difficult to determine the specific cohort a student belonged to.

The researcher probed student responses through a relaxed and friendly dialogue in focus groups; an interviewer followed the same approach during telephone interviews to explore perceptions and comments regarding integration of lecture recording. Students were able to contribute to the research by using their own words and own unique styles. In order to maintain anonymity and confidentiality, pseudonyms will be used when referring to all participants.

Determining whether students were campus based or online students was not essential for telephone interviews or focus groups. The researcher did not want participants, particularly in focus groups, to be focused on their provisioning mode, as it might cause participants to lose their sense of unity as students in general. The researcher also believed that focusing on provisioning might cause unwanted categorisation, which would influence spontaneity. Despite this approach, almost all students gave clear indications of their mode of provision through their responses, which made classification of data possible.

The following themes were identified while working through the data: a) Students' definitions of lecture recording; b) Lecture recording and class attendance; and c) Lecture recording adds flexibility to learning experiences.

### 4.4.2 Theme: Students' definitions of lecture recording

The way students define lecture recording provides a deeper insight into the way they use lecture recording. The way they define it also provides insight on how they view the purpose of and integrate lecture recordings in their studies. Students' definitions of lecture recording depends largely on the mode of provision or the media format that is used, e.g., video, audio or live streaming.

From the outset, it was clear that a variety of definitions exist for what students consider lecture recording to be. Students described a lecture recording as being "live" (n=4), while others described it as "pre-recorded" (n=1). Definitions offer different dimensions of how lecture recording is understood in different scenarios and relates, specifically, to the mode of provision students are enrolled for.

Whether a student is studying as a campus-based or an online student offers insight and in-depth detail regarding lecture recording integration, as is seen in the following response:

> *I think it's not just done for students on campus who are actually studying on campus, like face-to-face with the lecturers; it's also done for students who are studying through e-learning meaning that they're not on campus, they're not hands-on, so they rely on audios and slides and all of that, those kinds of things; so, audios, for me, are just to help them to understand what was happening in class, what was discussed. (Bianca, FG2)*

Bianca's response strengthened the researcher's initial concern about asking students to identify their mode of provision during the telephone and focus groups. There is a definite distinction between "them" and "us" when students refer to their mode of provision. Students seem to allocate more value and prestige to the campus- based mode of provision, than to online provision.

Campus-based students defined lecture recording as follows:

> *It's basically, a live on the day on the moment everything, so it's absolutely live. (Angelina, INT1)*

> *It's basically just a recording of the lecturers that the lecturers did, where they also show the work while they're doing it. (Isabella, INT3)*

*Pre-recorded lectures that are made available (Jennifer, INT10)*

Campus-based students view lecture recording differently from the way online students do. The former are exposed to a variety of types of lecture recordings, which plays a role in the way they integrate lecture recordings into their studies. Some lecture recordings are understood as being pre-recorded, others are live lectures, and others are simply experienced as a capture of what a lecturer did during a lecture.

Online students defined lecture recording more universally:

> *Lecture recording is a recorded version of a lecture that took place earlier in the day or the week. (Brandon, INT2)*
>
> *Contents of the subject is delivered via either a video or an audio. (Kagisano, INT7)*
>
> *Each and every lecture that takes place, there's a recording. (Thatokela, INT8)*

Online students described lecture recording as being time-based: Lecture recording is something that occurred earlier and which contains content.

Focus group responses yielded additional definitions of lecture recording:

> *It just means it's going to be recorded and, like, we can play it then later. (Charlie, FG1)*
>
> *Oh, it's so that the, the whole lecture will be on record or recorded with a recorder, and then it will be available after the class, any time, with the platform that the university uses. (Minnie, FG2)*

### 4.4.3 Theme: Lecture recording and class attendance

As observed in Chapter 2, there is ongoing debate about the impact lecture recording on class attendance. Student responses offer various references to class attendance and why lecture recording influences their lecture attendance – mainly for campus-based students, who have the choice to engage in either face-to-face lectures or online lectures. Students gave a variety of reasons for shifting between the two modes, from timetable clashes to other commitments:

*Um, I find it very beneficial, since I play sports for the varsity so it's not always possible for me to attend all my classes. So, the fact that the lectures are recorded allows me to catch it up in my own time. (John, INT6)*

For John, lecture recording offers a substitute for times he cannot attend lectures due to clashes with his sports commitments. Mike states that lecture recording is a main reason why student do not attend class; instead, using it as a substitute for attending face-to-face lectures:

*I feel like it stops students from attending classes. (Mike, FG2)*

Other students, including Tshegofatso and Thatokela, openly agreed that lecture recording affords them the option to not attend class at all:

*I have never attended even a single class. (Tshegofatso FG2).*

*Students don't come to class because of these lecture recordings, it stops them from coming to class. So, I think it discourages them. (Thatokela, INT8)*

Some students shared that their awareness of lecture recording impacts their participation in lectures in various ways:

*Like myself, even if I can be present in class, even if I have a question, I would never ask that question [other participants agree]. So, there is no need for me to go to class. (Miriam, FG2)*

*Yeah, and it makes me less attentive in class too, because I know I can just listen to it again. So, I'm sitting in class and if I know it's not going to be recorded then I would have taken more notes and maybe paid a bit more attention. (Cecil, FG1)*

Focus group participants expressed concerns that having access to lecture recordings has the potential to change a campus-based student into an online student:

*I have an audio so I'm gonna sleep [other participants laugh] they become online students. (McDonald, FG2)*

The comments above by participants shows how students make use of modification when lecture recording is integrated. Students modify their participation in class due

to the integration of lecture recording and, consequently and effectively, change and modify their learning experiences, albeit not necessarily in a positive way.

Mike expressed concern about modification possibilities when lecture recording is integrated in a campus-based environment. According to him, lecture recording modifies campus-based students' in-class behaviour:

> *My reaction for the lecture recordings is that, when a lecturer says that, I feel afraid [other participant agrees], you know, 'cause you're afraid of questioning, like, some people are shy, so, if you hear that you become more shy, that people are going to hear what you are saying and what you were asking in class. You're even afraid of commenting as well, so you think you're gonna be exposed [other participant: Hmm, in agreement. (Mike, FG2)*

In conclusion, students have a variety of viewpoints and concerns regarding attending class when lecture recordings are available. Overall, campus-based students' views on lecture attendance ranged from legitimate reasons for not attending (such as sports commitments), to opting to become "online student"' as a personal choice.

### 4.4.4 Theme: Lecture recording adds flexibility to learning experiences

Campus-based and online students described flexibility in relation to lecture recording in various ways. During interviews, students were asked how they viewed the relationship between the lecture recording and flexible learning and a successful learning environment:

> *Uh, I think it's the freedom, the freedom of choice, the freedom to be able to choose when and where I want to listen to this. (Brandon, INT2)*

> *You do it at your own leisure. (Isabella, INT3)*

In addition to freedom and choice, other examples indicate how lecture recordings contribute to flexibility regarding time and pace:

> *You can do it in your own time and fit it in your own schedule. (John, INT6)*

*And in the evenings when everything has quieted down, when you heard the news, and you have had your supper, and then you can go to the study and relax. (Brandon, INT2)*

*I can do my work at my own pace at my own comfort at home. (Kagisano, INT7)*

*Um, I'll definitely say it, it helps students, um, that are part-time students 'cause of students that need to work with flexibility to your time, I would say, um, it helps with that. (Isabella, INT3)*

Participants emphasised the way lecture recording creates flexible learning opportunities by making it possible to skip class and still be able to "catch-up".

*Very important for me, because I'm a full time, I'm full-time employed, so I need, I need to have flexibility… surrounding this, ja [yes]. (Kagisano, INT7)*

### 4.5 Interpreting qualitative data through the SAMR lens

Interview and focus group answers were categorised using SAMR, to provide detail regarding the basic level of SAMR integration among students.

Substitution: Student responses were categorised and coded to indicate substitution and explore the basic level of lecture recording adoption. As discussed in Chapter 2, this level or stage is described as the easiest and most commonly observed in the field of educational technology integration broadly. Lecture recording is introduced as a technology that merely substitutes or replaces a lecture.

Kagisano (an online student) explained how he sometimes uses lecture recording as a substitution for a lecture, because as he refers to lecture recording as being "mainly for the lectures".

*Well, I use it for the lectures, you mean like, what, what method do I use, or what? It's mainly for the lecture recordings, or for the tests, they give us the scope for the tests, some additional material for us to study as students, but it's mainly for the lectures. (Kagisano, INT7)*

*I download them after they've been posted; these are the recordings that are uploaded, then you download them and then after I've gone through the work. (Angelina, INT1)*

Kagisano and Angelina refer to a common perception shared by their peers. Lecture recording is implemented in a module as a substitute for lectures, and is viewed as a helpful additional resource. Their view is that lecture recording offers no significant contribution, other than being a resource that could contribute to their learning experiences. The attitude of a lecture recording as content and as resource-driven substitute was commonly observed.

Augmentation: Student responses were categorised and coded, and augmentation, as the basic second level of lecture recording integration, was explored. This category was described in Chapter 2 as technology use that adds certain improvements and functions to previous approaches, in this case, face-to-face-only lectures. Lecture recording, introduced as a technology that augments his learning, characterises a lecture that has additional functionality and options that had not, previously, been achievable. For example, a lecture recording can be downloaded and replayed, paused and rewound.

Brandon, Walter and Frans explain that, as online students, they make use of lecture recording to enhance and create notes. They do this by referring back to lecture recordings to listen again and to clarify concepts:

*What I do is I try to get ahead in terms of, my own preparation, and then, I like to make notes, my own notes of each and every module that I do. And, once I've done that I mark certain areas that are not that clear, that needs a bit of clarification. Then I listen to the recording. (Brandon, INT2)*

*I go through the content that was discussed and it makes it easier that way. Or, go through the content while I'm listening to the audio. (Walter, INT9)*

*[translation] The best way to learn is to repeat. So, I think it is the best to hear how she, the lecturer, explains and to be able to make sure. (Frans, INT5)*

Augmentation offers students the possibility if rewinding, replaying, reciting and repeating a lecture. In this way, students are able to augment a lecture recording to

improve it and add possibilities that are not possible, traditionally, to suit their learning needs. About half the students, especially students who struggle to speak in class, indicated they found the recording very valuable for revision of concepts they did not understand, and that using the recording made them more active learners.

Modification: As described in Chapter 2, in the SAMR model modification is the first phase, where significant change and redesign of a task occurs. A significant difference between modification and earlier phases of the SAMR model is that educational technology is observed as making previously inconceivable teaching options possible. For example, lecture recording in the form of live online lectures can be used to engage students in online discussions and feedback across campuses simultaneously.

Students responded how they made use of lecture recording in a way that is traditionally not possible without technology. Matthew reflects on how a lecturer makes use of Blackboard Collaborate and creates space for discussions online:

> *I know only one lecturer in our faculty, out of six, who has a recording and opens a discussion. So, even if you did not attend the classes, she mentioned earlier that when she has a question, she cannot really ask; but that lecturer open a discussion. So, if you missed a class, there's a recording; if you need, if you have a question, then there's a discussion where you can ask that follow-up question. (Matthew, FG2)*

Modification, as a technology integration level, was not commonly observed or discussed. One of the reasons for this could be because lecture recordings are mainly audio recordings.

Redefinition: The last phase or level of the SAMR model is redefinition. As explained in Chapter 2, this phase involves creating a complete and new learning experience through the use of educational technology. The redefinition phase uses technology to redefine a learning activity to such an extent that, without the technology, the activity would not be possible. An example of how lecture recording can be implemented in the redefinition phase of SAMR would be a lecture recording being used in a flipped classroom approach, whereby students do not attend lectures to receive a lecture but to participate in activities. Lecture recording is repurposed, to be a homework activity instead of being a lecture itself.

Student responses indicated lecture recording as redefinition was linked to the use of multimedia. This study argues that, in the absence of some use or variety of multimedia in lecture recording, redefinition would be every unlikely, as it is only through the use of multimedia (video and audio) that slide, presenter and annotations are possible. This was confirmed by student responses:

> *Mr Motse, he presented , it was like animation, type scenarios and he gave you know a credit note looked like or debit note, whatever he needed to give and it was to me… So, those pictures were like, beautiful because when you now try and explain something, you know because your mind works in picture forms, You know that this needs to be on the right side this needs to be on the left side so pictures definitely enhance learning because it's like a mind map. (Angelina, INT1)*

> *Except for pre-recorded videos. OK, that then brings up the reality of the module, because what I received in one of my modules is this, eh, they're video recordings from aspects that people who are in the field and they explain to you how to use your study material and how to use your content, so that made the module practical and it made it much more easier for me to prepare and learn the content of the module. (John, INT6)*

Redefinition was rarely observed throughout the study, with the exception of one or two lecturers mentioned by name. The complete transformation of lecture recording as a redefinition is anticipated when students are asked to describe and explain their views; however, their reality and context reveal that it is observed less frequently.

## 4.6 Conclusion

The chapter offered an analysis of student data gathered from online surveys, telephone interviews and focus groups, and reported the main findings.

The first section of this chapter discussed the importance of students' use of lecture recording, through an exploration of quantitative data gathered from a student survey. Students' preferences regarding lecture recording were explored by analysing data pertaining to student devices and access preferences, student views regarding face-to-face lectures and online lectures, the impact lecture recording has on class attendance, and the role of flexibility and lecture recording. This section also

investigated student use of lecture recording by incorporation of the SAMR model. Findings are that students mostly categorised lecture recording integration as substitution and augmentation. Modification and redefinition were reported less frequently, often only with reference to individual understanding.

The second part of the chapter discussed the importance of students' use of lecture recording, through an exploration of qualitative data gathered from interviews and focus groups. Students' preferences for lecture recording were explored by analysing the way students define lecture recording, the impact lecture recording has on class attendance and flexibility, and the role lecture recording plays in creating flexible learning environments. This section also investigated students' use of lecture recording by incorporating the SAMR model. It was found that lecture recording integration occurs mostly on the substitution and augmentation levels. Focus groups and telephone interviews confirmed that lecture recording integration on modification and redefinition levels is dependent largely on the type of technology and media used.

# CHAPTER 5: LAW LECTURERS' INTEGRATION OF LECTURE RECORDINGS AND RESPONSIVE PEDAGOGIES

## 5.1 Introduction

Lecturers use lecture recordings in various ways. Some make use of audio recordings of their lectures, others record a video of their presentation with voice-over, and/or others record a video of their lecture in the face-to-face class session. As discussed in Chapter 1, the terms associated most frequently with lecture recording, in this study's context, is audio recordings, audio lectures or audios. This means very few lecturers use Office Mix for prerecordings, or Blackboard Collaborate to stream live sessions. This chapter will investigate how lecturers integrate lecture recordings in their teaching, by analysing data gathered from online surveys and individual interviews.

Eight lecturers completed the survey and three were interviewed. It is compulsory for all lecturing staff in the UFS Faculty of Law to make use of lecture recording for their lecturers, for both campus-based and online students.

## 5.2 Categorisation of findings

The first section will explore quantitative data gathered from survey responses in relation to the importance of lecture recording integration from a lecturer perspective. Perspectives and feedback regarding lecture recording as a teaching approach, lecturers' perceptions about lecture recording and student learning, SAMR and lecture recordings, lecture recording and class attendance, and students' learning experiences using lecture recording were explored. The second section will offer an analysis of qualitative data gathered from individual interviews with lecturers regarding their experiences of using lecture recordings. The importance of lecture recording, definitions of lecture recording, the role of lecture recording in teaching and learning, lecture recording and flexible learning opportunities, lecture recording and multimedia, and the influence of lecture recording on class attendance will be explored.

## 5.3 Quantitative data analysis and findings

### 5.3.1 Lecturers' context and background

As discussed in Chapter 3, the lecturers chosen for the study were lecturers that teach in the LLB undergraduate programme of the Faculty of Law. These lecturers teach both the campus-based and online modes of delivery. Quantitative data was gathered from a total of eight lecturer participants who completed the online survey; qualitative data was gathered through interviews with three lecturers. The Faculty of Law mandates that all face-to-face and online lecturers must be recorded and distributed to students after the lecture via Blackboard. Lectures do, however, have a choice regarding the way they would like to record the sessions, as mentioned in Chapter 3.

### 5.3.2 Lecturers' use of lecture recording and teaching methodology as part of their teaching approach

In order to interpret the way lecturers integrate lecture recordings as part of their teaching approach, it is important to understand how they feel about using lecture recordings in their teaching. Staff were asked how satisfactory they rate lecture recording as a teaching tool. Figure 5.1shows that the majority of lecturers (n=5) were satisfied with using lecture recording as a teaching tool.

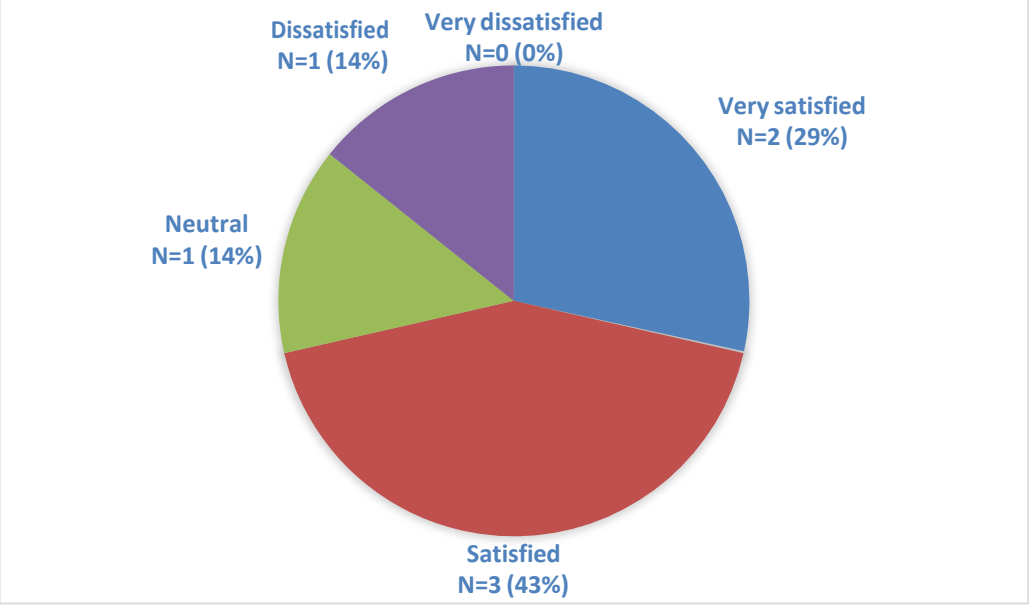



**Figure 5.1: Lecturers' satisfaction with lecture recording as a teaching tool**

Question 2.3 of the staff survey asked, “On average, how satisfied have you been with this method?” The one participant who indicated dissatisfied, reported that class attendance had declined by 50% after the first week of face-to-face classes. Furthermore, students referenced only the recording to determine what the lecturer had shared with the class, and then complained about their poor performance in tests.

> *Complaints from students who performed poorly in tests and examinations usually referred to something that was said (and in 100% of these instances incorrectly interpreted by the students) or not said (specifically) in the recordings. (Mary, 5)*

Mary also commented that on campus-based students complained about online students’ access to lecture recordings:

> *Some students also complained that off-campus students should not receive the recordings, because they're not in class. There is no indication that students performed better with the aid of the recordings, at least as far as the on-campus students are concerned. (Mary, 5)*

Although the majority of lecturers indicated that they were satisfied with using lecture recording in their teaching, they mentioned both positive outcomes and a few challenges and concerns in their comments on Question 2.3.

> *Because of the availability of primary lectures online, I have not needed to constantly re-explain many of the theoretical work in the module. (Tom, 1)*

> *It [lecture recording] allows students to concentrate on the lecture and actively participate in discussions in class, instead of trying to take down notes of everything that is said in class – knowing that they can listen to the lecture again. (Peter, 4)*

> *A handful of students did not pay attention during class, stating afterwards that they'll listen to the recordings. (Mary, 5)*

The survey asked lecturers, whether, if it was up to them, they would consider teaching with lecture recording in the future (Question 2.5). Five (62.5%) respondents chose probably and three (37.5%) respondents chose probably not, which indicates an generally positive attitude among lecturers about using the tool, due to the contribution

it has made to their teaching and their students' learning. One lecturer mentioned that it takes time to get used to using lecture recording (Gerry 3), however, it assists students with their learning and to re-access the content numerous times (Sally, 7). Robert who said he would probably not continue using lecture recording if he had the option, commented that he wants more freedom in the way he teaches, and wants to choose the teaching tools and approach he uses for teaching his module/s.

In Questions 4.2 and 4.3 (open-ended questions) lecturers were asked to identify the most positive and the least positive aspects of teaching a course using lecture recordings. The following are some of the responses.

In response to Question 4.2, Peter referred to the answer he gave to Question 2.4:

> *Students reported that the recorded lectures assisted them - to revise - to catch up if they missed a class or - if they did not understand the work, to listen to the recording again - off campus e-learn students obtain the opportunity to be part of the face-to-face class experience with discussions. (Peter, 4)*

This response indicates a positive reaction from the lecturer's students about the particular teaching approach used to integrate lecture recordings.

### 5.3.3 Lecturers' perceptions about lecture recording as a revision tool

Lecturers generally agreed that lecture recording helped students to revise their work (Question 2.9). Five (67.5%) lecturers indicated that it is an effective tool, and three characterised it as very effective. Three (37.5%) respondents gave a neutral response, and one mentioned that,

> *It depends on how the recordings are used and why they're used in the first instance. (Mary, 5)*

Another lecturer mentioned that her students loved the lecture recordings, because it helped them a great deal. However, the lecturer herself hated using it because it puts the lecturer in a vulnerable position, because anything they said could be misinterpreted, and students could quote the lecturer on something said in class. The particular respondent was of the opinion that the way they use audio lecture recordings misses the point of using it as an effective teaching tool.

### 5.3.4 Class attendance and lecture recording

In the survey, lecturers were asked if they believed that lecture recording integration would affect how often students attend class. Four lecturers agreed strongly, three agreed and one gave a neutral response.

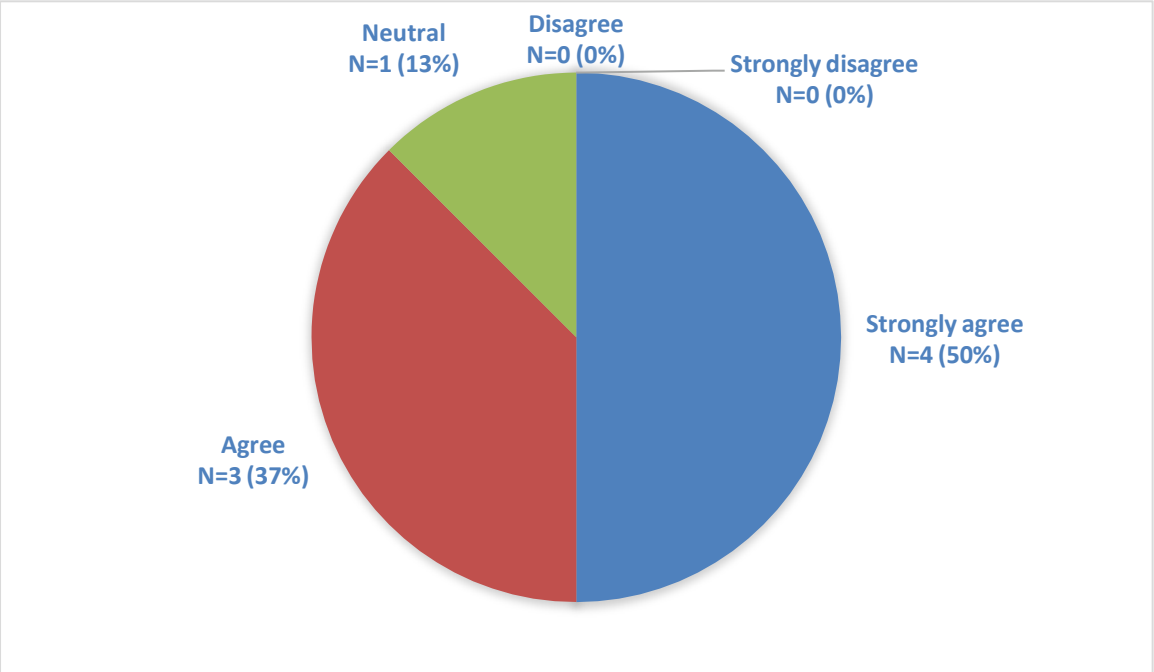



**Figure 5.2: Staff survey: "Having lecture recordings online would affect how often my students attend class"**

In other survey questions, lecturers gave feedback on how lecture recording influences class attendance, without being asked about it directly. Lecture recording and its influence on class attendance was raised constantly by lecturers. This trend was also observed in Chapter 2, and in student responses reported in Chapter 4.

In most instances, lecture recording is associated negatively with class attendance. The qualitative second component of this chapter explored this phenomenon in more detail.

### 5.3.5 Students' learning experiences using lecture recordings

Staff were asked to indicate how they rated their students' learning experiences when using lecture recordings (see Question 2.7, Appendix H). Lectures were divided in their responses. The majority believed lecture recording improved students' learning experiences (n=5), one respondent said it was about the same, and two believed that

learning experiences with lecture recording were worse. Some of the comments were as follows:

> *Students revisit the recordings numerous times, so this amplifies the learning experience gained in lectures. If it didn't work, they would not do that. (Gerald, 2)*

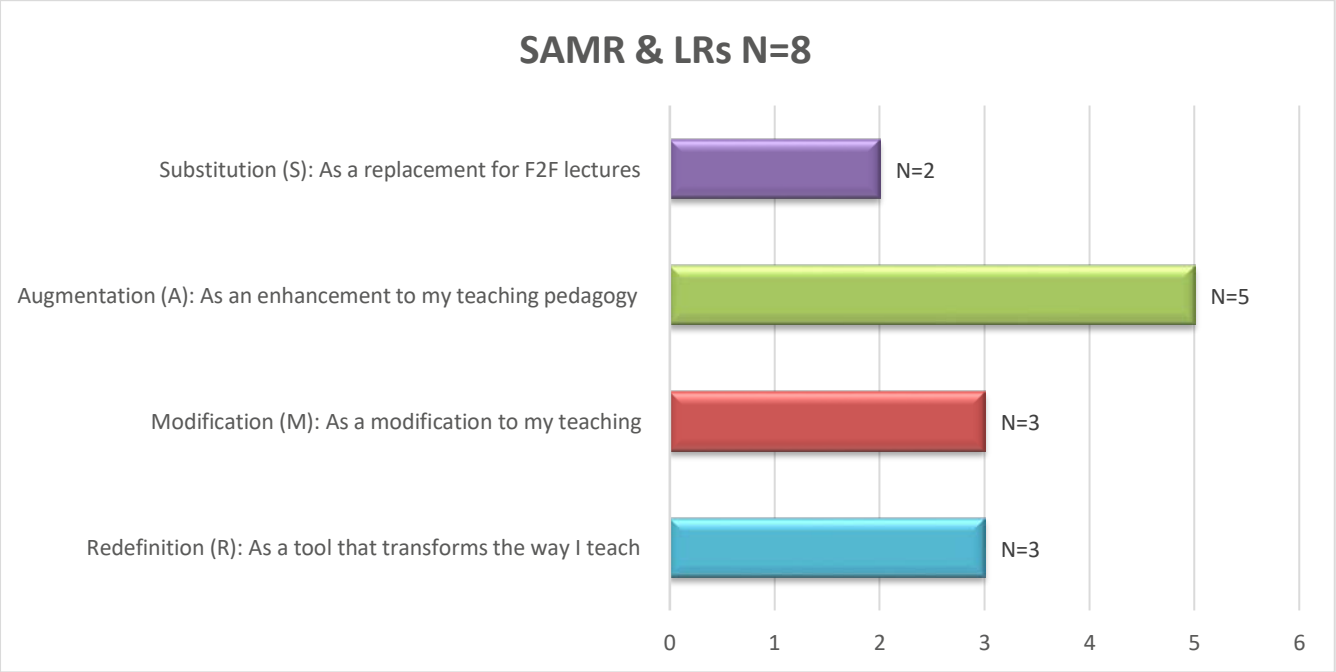
> *Students tend to interpret recordings as they wish and assign a use and importance to these that suit their learning methods or, in some instances, excuses or arguments as to why they did not study properly. Regardless of any of the above, the records and statistics of the modules show a decline in performance along with a decline in class attendance when compared to previous years and instances where class recordings were not made available to on-campus students. (Mary, 5)*

Mary's comments above indicate that lecturers seem to understand that their students experience the use of lecture recordings as a positive learning experience. Not everyone, however, agrees. There is a split between those who care about students' learning experiences, and those who focus on performance – this is also visible in the literature reviewed.

## 5.4 Quantitative data through the SAMR lens

This chapter uses the SAMR model to analyse how lecturers integrated lecture recordings in their teaching. As explained in Chapter 3, coded analysis using the SAMR model was used to explore the quantitative and qualitative data. Survey responses provided a broad overview and classification of the subsidiary research question of this study. Qualitative data gathered during interviews provided a more detailed view of the lecturers' perspectives, especially when categorised using the SAMR model.

The lecturers were provided with very little detail about the SAMR model and how it is used traditionally. The study was, therefore, very interested in gauging how participants categorise integration of lecture recording in the absence of prior knowledge of the SAMR model. A survey question was formulated as follows, and participants were allowed to make multiple selections: What do you see as the role of lecture recordings in your teaching and learning practice? (Appendix H, Question 2.11)




Lecturers could choose more than one option.

**Figure 5.3: Question 2.11: *"What do you see as the role of lecture recordings in your teaching and learning practice?"***

As Figure 5.3 indicates, augmentation was selected most by lecturers. Augmentation was selected five times, modification and redefinition were both selected three times each, and substitution was selected by the participants twice. As observed in Chapter 4, this response by lecturers differs quite significantly from students' view of lecture recording integration level descriptors. This response by lecturers indicates that seven respondents saw lecture recordings as substitution and augmentation, which falls in the enhancement category of Puentedura's (2006) categorisation of SAMR (see Chapter 2, Section 2.5), and six respondents placed lecture recordings in the transformative category of Puentedura's categorisation, which consists of modification and redefinition. Lecturers' were asked to elaborate on their responses.

> *In my opinion and from my own experience as explained above, the most effective use of recordings have been the assistance it grants to the off-campus students who cannot attend lectures, as opposed to the student who can attend, but chooses not to. The flipped classroom approach did not enhance the teaching of the work, in some instances it frustrated it. Although recordings can modify and transform teaching, I am yet to see an*

*instance where it improves understanding of the work, learning method or discipline of students. (Mary, 5)*

This comment explains that lecturers believe that lecture recording alone, in isolation, cannot be categorised without the pedagogical approach being considered.

A comment about selections that were made for lecture recording as augmentation only was the following.

*Students learn in different ways. Some of the students don't like the recordings and don't participate in Blackboard Collaborate. Other students don't want to participate in class, but they do during Blackboard Collaborate sessions. For me as a lecturer, it enables me to do so much more with students – not only online, but also face-to-face. (Gerald, 2)*

This comment reiterates that student and lecture preferences about learning affects how categorisation of lecture recording integration occurs.

A comment about selection for both redefinition and modification was the following.

*Live online teaching, using technological tools to enhance teaching and recording live lectures has allowed me to reconsider and redesign my approach to teaching and assessment. While I think this is an ongoing process of evaluation and modification, I have started to discover the vast opportunities to improve my teaching and the immense variation in what we can do. (Tom, 1)*

## 5.5 Qualitative data analysis and findings

5.5.1 Using and integrating lecture recording, from a staff perspective, was investigated through analysing the most prominent themes that came out in individual interviews. This section will explore the value afforded to lecture recording from a lecturing point of view, by using thematic coded categories. Three lecturers were interviewed about their integration of lecture recordings. Interviews focused on three main categories of inquiry, namely, a) Definition of lecture recording, b) The role of lecture recording

in teaching c) The role of lecture recording in learning and d) Lecture recording as a flexible learning tool and effect on class attendance

### 5.5.2 Definition of lecture recording

Lecturers' definitions of lecture recording varied, depending on the technology they used and what pedagogical approach they were familiar with. Lecturers gave lengthy definitions of lecture recording.

Dorothy described using lecture recording at a substitution level. She used lecture recording as an addition to existing lecture tools, to facilitate students who are unable to attend class:

> *When we talk about lecture recording, for me, it's more of the practical things, and be switching on the tape recorder; at the end of the day facilitating those who didn't attend class and those who don't intend attending class; it's just that they at least have access to whatever was said in class. (Dorothy, INT 6)*

Jessica also defined and implemented lecture recording on the substitution level, and understood and was aware that other levels could fundamentally change her teaching of a class through the use of technology:

> *Uhm, from what I've read, that's much more successful, it can be much more successful than just a mere lecture recording. Lecture recordings, I feel, are not necessarily conducive to getting students to a contact session. Uhm, whereas an online session, online class, they actually log on, they're there. The recording is available afterwards, uh, at least, technology that I used, but that one-on-one contact between lecturer and student I find important. So, lecture recording, for me, a mere recording of the lecture regardless of where it took place. (Jessica, INT3)*

Peter also viewed lecture recording as a direct tool substitute, which caused no functional change to his teaching:

*Well, I understand the fact that you take with you the, the recording device and the lecture that you present live to the students in your lecture, scheduled times is, is verbatim recorded and later on then loaded on to a system so that students can afterwards listen to it again to catch up and so forth, so, basically, that's what I understand under that. (Peter, INT2)*

This indicates that the three interviewees understood lecture recording in a similar way as the students, which is either as a recording of a "live" session, which can be either a video or a audio recording, or as a prerecording of a lecture that is made available online.

### 5.5.3 The role of lecture recording in teaching

Participants were asked to explain how they integrate lecture recording, specifically in relation to their teaching. Participants responded with a range of positive and negative experiences.

*With live, online classes, it's much more hands-on, much more space for interaction and for the face-to-face contact that's still needed regardless of how much we love technology in teaching. (Jessica, INT3)*

Jessica explained that live online classes allowed for modification in her teaching, as significant task redesign is possible. She emphasised that face-to-face contact still has an important role in her teaching.

*There are quite a large amount of students who don't come to class either because they've got class clashes without other modules or in other faculties like the BCom, for instance, where they fail certain subjects and then there's a overlap. (Dorothy INT1)*

Dorothy described lecture recording in her teaching as substitution, and related how she measured the role of lecture recording in her teaching via class attendance. This approach is discussed in more detail in Section 5.6.

Lectures listed the following disadvantages of their use of lecture recording:

*You have students that rely solely on that & they're not gonna come to contact sessions; they're not gonna read a little bit further; they're not gonna participate in class discussions. (Jessica, INT3)*

> *I simply hate it because it really cramps my style... I can't ask students questions in [lecture recording] class because I can't allow them to identify themselves (Dorothy, INT1)*

Dorothy's comments indicate that lecture recording is a hindrance to her teaching in general and that she does not want to use it.

Jessica is concerned about the way lecture recording influences student participation and attendance of face-to-face lectures. Peter expressed the same concerns as Dorothy:

> *Initially I thought that it might dampen the spontaneity a little bit of the lecturer and you might be a little bit reserved about saying stuff that you normally would have done in class because of the fact that you might be afraid that it might be loaded up and listened to and understood differently and out of context by, by people listening, listening to it. (Peter, INT2)*

Peter explained how using lecture recording might expose or dampen his teaching of a module. The advantages and disadvantages of teaching with lecture recording, therefore, differ for each lecturer and depends largely on their individual usage and teaching approach. The fact that lecture recording is compulsory also weighs in on the type of comments offered.

### 5.5.4 The role of lecture recording in learning

Participants were asked about the role they believe lecture recording play in students' studies. Although Peter's use of lecture recording occurs mainly at substitution level, he explained that he believes it is helpful and worthwhile:

> *Basically hundred percent of the students that I talk to afterwards said that it helped them immensely, so I gave you a very long answer, but that changed my mind somewhat, not somewhat, substantially, in saying that, "Well, if it helps the students, then, then it is a worthwhile tool to be using to help students". (Peter, INT2)*

Jessica, who used lecture recording on a modification level, which allows for significant task redesign, shared how lecture recording makes learning personal and creates a sense of community for her students:

*But the vast majority of students who participate in online teaching, and who I know use the recordings regularly, find tremendous benefit in it. They love it and I've gotten response, interesting responses like you never exp… I mean, I didn't expect intimacy to be something that the students would find valuable. And, and eighty percent of the students said they felt they had a direct line to me all the time; they felt it much more intimate than sitting in a class where you're just one of a thousand faces. (Jessica, INT3)*

Dorothy, who used lecture recording on a substitution level, explained how the integration of lecture recording can cause trouble for lecturers, by being used against them

*Students like it, they forever want the recordings, because they also hold you accountable to it, "But, Mam, you said you would only ask one mark form this portion of the work" and then they refer you back to the audio recording, "now you ask two mark", now you're in trouble with the dean and whole [inaudible]; I know about lecturers who went through that whole exercise. (Dorothy, INT1)*

### 5.5.5 Lecture recording as a flexible learning tool and effect on class attendance

In the interviews, lecturers were asked to share their views regarding the way lecture recording offers flexible learning opportunities for students. Dorothy (INT1) views flexibility in terms of disability and class attendance. Lecture recording, she said, adds flexibility for students with disabilities, or students who are unable to attend class. Jessica (INT3) views flexibility in relation to the way students learn and approach content:

*Uhm, well, I would say that that relates to the circumstances offered to a student to allow that student to choose how he learns, whether that students prefers to learn face-to-face with the teacher, teacher telling him things; whether he enjoys staying at home, visual learning, opening a book and just absorbing the work. It doesn't matter, doing an audio, it doesn't matter. Students learn differently and, I think it empowers them to have them choose how they learn, and not to expect everybody to learn exactly the same way; that's at least what I understand under the term. (Jessica, INT3)*

Lecturers expressed strong views in the interviews about the impact of lecture recording on class attendance, and referred to lecture recording as regularly and greatly affecting class attendance. Class attendance was mentioned in almost all interview responses. All the respondents mentioned the impact lecture recording has on class attendance, as also observed in Chapter 4 and in the quantitative data findings reported in Section 5.2.

## 5.6 Qualitative data through the SAMR lens

This chapter uses the lens of SAMR to analyse how lecturers integrate lecture recording in their teaching. Qualitative data gathered from interviews provided a deeper, more detailed view of lecturers' perspectives, especially when categorised using the SAMR model.

Dorothy and Peter viewed lecture recording as a direct tool substitute which made no functional change to their teaching, while Jessica viewed it more as transforming her teaching approach – this puts her use of lecture recording in the redefinition or modification category. Jessica's view of the way lecture recording brings flexibility for disabled students, and affects how students choose to attend classes – this view, again, puts her teaching methodology and her views on student learning in Puentedura's transformation category, which indicates a modification or redefinition in the way she teaches and her students learn. The data indicates that, when lecture recording is used as a substitutional tool, it has an influence on overall class attendance. Lecturers who integrate lecture recording as substitution, experience a decline in class attendance, whereas lectures like Jessica do not.

## 5.7 Conclusion

The chapter presented an analysis of lecturers' data, which had been gathered from a survey and face-to-face individual interviews.

The first section of this chapter explored the integration of lecture recording through an exploration of quantitative data gathered from a lecturing staff survey. Lecturers' preferences and integration of lecture recording was investigated by analysing data pertaining to lecture recording as a teaching approach, lecturers' perceptions of lecture recording as a revision tool, SAMR and lecture recording, class attendance and lecture

recording, and lecturers' perceptions of student learning experiences when lecture recording is integrated. Findings were that lecturers mostly categorised lecture recording integration as Substitution and Augmentation. Lecturers identified opportunities for Modification and Redefinition of lecture recording integration, however, a minority of lecturers actually implemented it at that level. In some instances, especially in relation to the teaching approach and class attendance, report a negative effect.

The second part of the chapter provided an analysis of interview data in relation to the integration of lecture recording. This section reported the way lecturers defined lecture recording, and viewed the role of lecture recording in teaching and learning. This section discussed the relationship lectures observe between lecture recording and flexibility, and how lecture recording can create flexible learning opportunities, and provided detail regarding lecture recording and its impact on class attendance.

Overall, data indicates that lecturers' ability to choose and implement lecture recording in the way that they want is hindered by compulsory elements present in the study's context, and that lecturers measure the effectiveness and integration of lecture recording by students' class attendance and performance. Beliefs about teaching and what they value plays a role in how they integrate lecture recordings.

# CHAPTER 6: CONCLUSION AND RECOMMENDATIONS

This chapter contains a summary of the main findings of the study. This chapter will also explain the limitations of the study, make recommendations for future research, and propose actions that could be taken in future endeavours within a similar context.

## 6.1 Summary of main findings

This study investigated the integration of lecture recording to support flexible learning, and as responsive pedagogies. As mentioned in Chapter 1 the study aims to identify elements of the way lecturers teach by integrating lecture recording as responsive pedagogical approach, and how students learn through using lecture recording for flexible learning.

The main findings can be categorised into three main groups: a) The technology, b) The pedagogical practice, and c) The cohort. By considering all three categories through the theoretical lens of SAMR, the study was able to explore various aspects of lecture recording and the way it influences each specific category.

As observed in Chapter 2, the benefits and advantages of integrating lecture recording is traditionally evaluated by analysing LMS viewing user statistics and quantitative survey data that reports on student and lecturer preferences and use. Research by Salahuddin and Gow (2015) on technology in education focused only on its affordances. This study proposed, through its findings, that investigating the technology, the pedagogical practice and the cohort used in this study could provide new opportunities and evaluate lecture recording as a flexible and responsive pedagogical tool.

- The technology: The technology used in this study was threefold: Office Mix, audio recorders and Blackboard Collaborate. Using a variety of technologies enables different configurations, features and possibilities for lecture recording. Although it is important to note that technology must always be seen as a tool and mediating component of teaching and learning, the research observed that neglecting to understand and evaluate the technology itself could influence teaching approaches negatively. Understanding the

technology in terms of capacity, features and functionality guides decision-making and potential use for a lecturer.

- The pedagogical practice: To teach knowledge and skills to students through lecturing is a complex pedagogical practice. Gosper (2008) found that the way lecturers choose to integrate lecture recording varies according to their beliefs about teaching and learning. In this study, lecturers struggled to explain in detail how their approach to teaching and learning is assisted and guided by the use of lecture recording. The study noted that responsive pedagogies and flexibility are hindered when lecture recording is used without a clear pedagogical approach. Lecturers are told they must record each lecture and make the recording available to their students.
- The cohort: The group involved in this study comprised two groups of participants, students and lecturers. Students were often observed to be using lecture recording in ways unintended by lecturers or unrelated to specific learning outcomes. Lecturers used lecture recording as a simple supplement to existing lectures, only to find that students were augmenting, modifying or even redefining lecture recording to suit their needs. The study found that students found lecture recordings useful in providing them with a multitude of opportunities, advantages and flexibility. Some lecturers, in turn, 'hated' lecture recording, and explained how it 'cramped' their style and was forced on them, as explained in Chapter 1, lecture recordings are compulsory for lecturers in the Faculty of Law at UFS. Many campus-based students do not feel the need to attend class if a lecture recording is available. In a sense, many campus-based students have inadvertently opted to become online students, without realising it. This means lecture recording has immense impact on class attendance, which concerns lecturers a great deal. Lecture recording supports students, especially for tests and exams, and they more frequently make lecture recordings available during assessment to revise work. Students are almost all in complete agreement that lecture recordings are advantageous, while lecturers are much more divided and reserved in their opinion.

Students and lecturers explained how lecture recording influenced the classroom environment and their sense of belonging. It was observed in this study that there are

misunderstandings about technology integration and use within the South African context which plays a role at the University of the Free State in the Faculty of Law. Data revealed students referring to fellow students as “others” when they refer to online students studying from a distance.

Lecture recording offers unique and innovative opportunities to faculties of law in Africa, if the software that is used is user-friendly. With curriculum reviews and accreditation evaluations becoming common in all South African universities, lecture recording has the potential to offer unique opportunities for flexibility, in terms of accessibility and reach. With the extensive functionality and possibilities provided by software and tools, lecturers can use lecture recording to enhance the quality of engagement. However, as the study shows, its use can, simultaneously, offer important lessons regarding the potential issues that can occur if it is used in a specific way.

## 6.2 Limitations of the study

The use and integration of lecture recording resulted in positive and negative teaching and learning experiences. Using educational tools, such as lecture recording, causes lecturer objectives and student use of the tool to become divided, especially when pedagogical approaches are taken into consideration.

The study was able to engage with a good number of students, but only eight lecturers participated in the survey, and three in interviews. A much wider study is needed to evaluate and explore the relationship between responsive pedagogical approaches, flexibility and the integration of lecture recording.

Application of theoretical frameworks is paramount when recommendations are made regarding technology integration. As discussed in Chapter 2, the SAMR model is a technology integration model that is focused on providing an in-depth exploration of technology integrated. The SAMR model is limited in terms of higher education contexts, though it is used extensively in primary and secondary education sectors. More examples of application in higher education are needed, so that its usefulness and potential can be compared at university level. While SAMR is useful, it has limitations. Future researchers are encouraged to develop an expanded framework that

uses the SAMR model to investigate the integration of lecture recordings at a larger scale.

## 6.3 Discussion

Using lecture recording in education offers possibilities for teaching and learning. A focus on what lecture recording offers in terms of flexibility and an ability to enhance responsive pedagogies in a university setting offers a good point of departure for teaching initiatives for any lecturer. Nuance between what students expect and need from lecture recordings, and what lecturers need and want, differ. If responsive pedagogies and flexibility are to be achieved, students and lecturers need to be informed about exactly how and why lecture recording is being used – only then can lecture recording be used without creating unforeseen surprises that might or might not be beneficial for teaching and learning.

## 6.4 Recommendations for action

Instructional designers have the opportunity to influence how educational technologies, such as lecture recording, are integrated within a curriculum. Integration of educational technology often occurs without the use of evaluation methods, especially in terms of understanding and determining if a lecturer's pedagogical approach accommodates the use of lecture recording. The purpose of this study was to research and understand, rather than to evaluate, the integration of using lecture recordings, although its findings may feed into evaluation too. The study's own interpretation, through the use of the SAMR model, proved useful for the following recommendations:

- Evaluation of lecture recording integration through SAMR would ensure that the correct educational technology, along with appropriate training, can be applied. For instance, the SAMR model as an evaluation rubric ensures that lecture recording on a modification level is integrated, by providing an introduction to software, such as Office Mix or Blackboard Collaborate. If SAMR is not used as a rubric to determine the level of integration, a lecturer who wants to use lecture recording on a substitution level might only be trained in the use an audio recorder, which would limit capabilities and the desired integration.

- Institutional policies regarding the use and integration of lecture recording are often lacking.

## 6.5 Recommendations for further research

Integrating lecture recording through the use of a responsive pedagogical approach to create flexible opportunities for teaching and learning, offers a variety of further research opportunities:

- Integration of lecture recordings in dual mode settings require further research.
- The integration of lecture recording on a South African university context redefinition level was rarely observed. Teaching and learning in an African context, where lecture recording is used primarily on modification and redefinition levels, needs to be explored further. As explained earlier, lecture recordings are used mainly as supplementary aids and to augment learning or as substitute for face-to-face lectures, rather than for modification or redefinition purposes.
- In the study's context, the integration and use of lecture recording was combined for online and campus-based students. Mode of provision offers differentiated use of lecture recording, and further investigation is needed to evaluate advantages and disadvantages in each instance.
- Research should investigate the way data and devices contribute to the success or failure of lecture recording integration.
- Research should be conducted into the learning experiences of online students, given the demand for affordable and flexible study options in South African higher education more broadly, not only in relation to lecture recording.

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# Appendix A – Literature review summary

## Literature Review

| | REFERENCE & PURPOSE | | | Subjects | | | Data' | Flexibility | Easy Index Nr |
|---|---|---|---|---|---|---|---|---|---|
| | Author(s), Title, Journal | Year Published | Purpose | LR Definition | Theoretical Underpinnings | Methodology | Main Findings | Comments | |
| 1 | Lecture capture in large undergraduate classes: Student perceptions and academic performance Ron Owston, Denys Lupshenyuk, Herb Wideman Institute for Research on Learning Technologies, York University, TEL1029, 4700 Keele St., Toronto, Ontario, Canada M3J 1P3 | 2011 | This study is an attempt to understand the relationship between student perceptions of lecture capture and academic performance | Lecture Capture and recording; recording of an instructors presentation and making it available online on the web | Mayers Cognitive Theory of Multimedia Learning | The research questions were investigated in six large freshman classes through Surveys and system data (Quantitative and Qualitative)MIXED | Whether access to captured lectures actually leads to improved student academic performance is still an open question as studies comparing classes with and without lecture capture show marginal, if any, improvement. | Lecture capture in large undergraduate courses is highly regarded by students as it offers them flexibility to attend classes—or not. | 1 |
| 2 | Lights, Camera, Learn: Understanding the Role of Lecture Capture in Undergraduate Education Daniel J. Mallinson , Stockton University Zachary D. Baumann , Pennsylvania State University | 2015 | Understanding the relationship between LR and student performance | Lecture-capture software allows instructors to record their class presentations for students to review as necessary | Not clear | The research questions were investigated through Surveys (Qualitative data) | Our survey posed a series of questions regarding satisfaction with the lecture-capture tech- nology used in our classes.low-performing students may be among those most likely to watch the recordings | Flexibility is described as convenience:A higher proportion used lecture capture to review content after class (48% versus 38%); however, a lower proportion used it to study for exams (52%ver- sus 69%) and to catch up after missing a class (55% versus 73%). It is interesting that rates of software use due to an inability t | 2 |
| 3 | Evaluating the use and impact of lecture recording in undergraduates: Evidence for distinct approaches by different groups of students Wendy Leadbeater , Tom Shuttleworth b, John Couperthwaite , Karl P. Nightingale , | 2012 | Measuring through evaluation the impact of LR on Academic success | Audio and Video Recording as a supplementary tool for Lectures | Cognitivist | Multi year undergraduate study through surveys data and focus group Quantitative and Qualitative ( MIXED) | Students use LR strategically for what they need eg revision notes preparation etc.. | Podcasts referred to as having small but significant impact on students p1) More extensive notes | 3 |
| 4 | Web-based lecture recording technologies: Do students learn from them?Maree Gosper, Margot McNeill, Karen Woo, Macquarie University Rob Phillips, Murdoch University Greg Preston, University of Newcastle David Green, Flinders University | 2007 | Whether student's learn from them how do they go about their learning. | WBLT Web based lecture technologies. | Not clear | Overview of student experiences of web-based lecture technologies with a particular focus on pedagogy and student learning. Through survey development and delivery. Qualitative | Significant and Moderate reported that LR helped them in learning better. Small group felt did not help and was detrimental to learning process | Pick up where I left off if I missed a class revisit complex material and my own pace | 4 |
| 5 | Evaluating the use of lecture capture using a revealed preference approach Caroline Elliott University of Huddersfield, UK David Neal Lancaster University, UK | 2016 | Understanding LR through the use of reveled prefrence approach | Lecture capture technology records or captures lectures and seminars | Revealed Prefrence approach Paul Samuelson | Qualitative surveys undergraduate and post graduate modules in UK | Supplementary resopource rather than alternative resource. Spikes of usage due to tests and assessments | Notes, pause and rewind, missed class learn at my own pace. | 5 |
| 6 | A review of podcasting in higher education: Its influence on the traditional lecture Oliver McGarr University of Limerick | 2009 | the possible influence of podcasting on the traditional lecture in higher education | Podcasting as a tool to suport enhance and replace the traditional lecture | Substututional moves to supplemantary to Creative No theory present but a sense of Bloom and SAMR present | LIT REVIEW | Podcasting as a supplementary use | Podcasting offers increased flexibility especially distance learning. Increased accessibility | 6 |
| 7 | Lecture-recording technology in higher education: Exploring lecturer and student views across the disciplines Kulari Lokuge Dona Monash College Janet Gregory Swinburne University of Technology, Sarawak Campus Ekaterina Pechenkina Swinburne University of Technology | 2017 | findings of an institutional case study investigating how students and lecturers experienced a new opt-out, fully integrated lecture-recording system which enabled audio and presentation screen capture. | Lecture recording System | Not clear | Case Study Methodology Qualitative and Quantitative survey and system data | Student and Lecturer prefrences are very much different | learn at own pace, helpbalance schedule | 7 |

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| 8 | Lecture Capturing to Transform Student Learning Opportunities in Large Classes<br>Stephanie Stephanie B. Corliss, Ph.D. James Henson, Ph.D. Joel Heikes, Ph.D. Michael Heidenreich | 2010 | Examine the impact of traditional uses of lecture capturing in courses of varying sizes and disciplines on students' learning and course and instructor satisfaction, and to explore innovative instructional uses of lecture capturing to re-design traditional classroom activities in large enrollment lecture courses. | Lecture Capture and recording; recording of an instructors presentation and making it available online on the web | Self directed learning | The evaluation assessed the functionality and usability of the system for instructors and students, user satisfaction, instructor expectations of lecture capturing and perceptions of the effects on teaching and learning. ( Quantitative and Qualitative ( Mixed ) | student and instructor satisfaction of the Echo360 lecture capturing system was very high. | Self directed learning | 8 |
| 9 | Office of the VP Academic and University Affairs<br>Lecture Capture in Higher Education Kiran Mahal, Vice President Academic and University Affa | 2012 | report: Research surrounding the common concerns, benefits and trends in | Lecture capture is a term use to describe any suite of technology used to capture audio or video of lecture activities to be made available for future use. | Not clear underpinneings of Kolb's learning styles | LIT REVIEW | Enhanced Educational Experience and Perforamce | Accessibility and different learning styles | 9 |
| 10 | Roberts, J.C. 2015. Evaluating the Effectiveness of Lecture Capture: Lessons Learned from an Undergraduate Political Research Class. Journal of Political Science Education (11) p45 - 60. | 2015 | 4 year evaluation and research abouth the use of LR | Lecture capture courses | Not clear | Quasi experimental and lit review | The success of onlie learning is situational | Student integration, learner centered approach | 10 |
| 11 | Richard Alan Lamb. 2015. A Makeover for the Captured Lecture: Applying Multimedia Learning Principles to Lecture Video. Doctoral dissertation. Nova Southeastern University. Retrieved from NSUWorks, Graduate School of Computer and Information Sciences. (36) http://nsuworks.nova.edu/gscis_etd/36. | 2015 | PHD Thesis Applying Multimedia Learning Principles to Lecture Video | The practice of recording aninstructors live presentationan dn making it available for viewing via the internet (16) | Cognitive theory of Multimedia learning | Tests and surveys: Qulaitative and Quantitative Mixed methods | The best use of LR is still not understaood, (93) | LR gives students control over time and place. (92) | 11 |
| 12 | Rui, Y. Gupta, A. Grudin, J & He, L. 2004. Automating lecture capture and broadcast: technology and videography. Multimedia Systems 10, p3-15 | 2004 | Our goal is to help automate the capture and broadcast of lectures to online audiences. | Lecture room automation | Not clear | Qualitative research done through putting 4 professional videographers and an automated customized system in a classroom to capture the lecture. Each recorded one of four lectures and then the videographers were interviewed. Experimental evaluation done with 'students' watching the footage from their office via a survey (qualitative). | Although professional videographers do differ to some extent in applying recording rules there is flexibility in how the recordings are done. If there isn't a professional videographer present other software can be used to capture the lecture, just as long as basic rules are followed. | N/A | 12 |
| 13 | Toppin, I.N. 2010. Video lecture capture (VLC) system: A comparison of student versus faculty perceptions. Education Information Technology (16) p383-393 | 2010 | The purpose of this study was to examine student perceptions of how using VLC impacted their academic performance. Areas of interest surrounded students' perceived benefits, value, and helpfulness of using the system. In addition, the study probed the concern of many about the impact using VLC would have upon class attendance and finally the study compared students' perceptions about their performance as a result of using VLC with faculty perceptions about their students' performance as a result of using VLC. | An umbrella term describing any technology that allows instructors to record what happens in their classrooms and make it available digitally. | Not clear | Instrumentation, population, data collection, and results. A review of different VLC products were done. Pilot study was done by incorporating the chosen coursecast software. A survey was sent for formal validation. | It was hypothesized that there is a significant difference between student and faculty perceptions. | N/A | Video lecture capture (VLC) |

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| 14 | Kilfoil, W.R. 2015. Moving beyond the hype: A contextualised view of learning with technology in higher education. Universities of South Africa. (A collaborative effort between different South African universities.) | 2015 | The objective of the study is to enable Vice-Chancellors to take the document to the executive leadership at their universities and discuss a change management strategy on the integration of education technologies into their universities, given their educational mission and their individual contexts, enablers and constraints. | N/A | Teaching approach / models to support teaching and learning with technology. Openness, OERs, Moocs. Devices as windows on the network. Trends in learning with technology. | Different methodology per institution | Different findings per institution | N/A | 28 |
| 15 | Carter, T. 2018. Preparing Generation Z for the Teaching Profession. Arkansas Tech University | 2018 | The purpose of the present paper is to examine the unique shaping factors, characteristics, and learning expectations of Generation Z and to provide recommendations concerning how colleges of education can leverage these aspects to better prepare these future education professionals. | N/A | Not clear | Lit review | It is essential that educators understand the Generation Z cohort's background experiences, shared understandings and previous learning in order to educate them more effectively. Four initial considerations when teaching this group is important: 1. Use of Mobile Technologies. 2. Blended learning environments, 3. Real-world problem solving, 4. Transformation and Entrepreneurship | N/A | Carter_Manuscript |
| 16 | Weidlich, J. and Bastiaens, T.J. 2018. Technology Matters - The Impact of Transactional Distance on Satisfaction in Online Distance Learning | 2018 | This study focus on transactional distancein online distance learning that relies on technologically-mediated communication or interaction. It is important that the aspect of technological mediation needs to be considered and for this purpose Weidlich and Bastiaens introduces a new scale for measuring transacational distance between students and the learning technology, comprised of two interrelated dimenstions. | N/A | Not clear | Data was collected from students in a large distance university. | The study demonstrates the importance of TDSTECH in understanding how satisfying online and distance learning experiences come to be. | None | 40 |
| 17 | Gordon, N. 2014. Flexible Pedagogies: technology-enhanced learning. Preparing for the future. The Higher Education Academy. | 2014 | The report considers some fo the opportunities for flexibility in learning, in particular the prospect of providing lifelong learning in a scalable way. This report considers the links between e-learning and pedagogy. | N/A | Flexible learning. Personalized learning. Technology enhanced learning. | Report | The role of lectures and lectures is still open to debate. If lecturers provide directed learning and lecturers provide role models and exemplars, then a blended approach should protect and encourage students to attend and benefit from the value added of the campus experience. The current evidence of the effectiveness of distance and massive online learning is mixed, so for the medium term the best approach has to be utilising technology to enhance the student learning experience by enabling greater flexibility. | Flexible learning focus on giving students choice in the pace, place and mode of their learning, and all three aspects cdan be assisted and promoted through appropriate pedagogical practice, practice that can itself be supported and enhanced through e-learning. From an institutional perspective, e-learning can offer new opportunities for flexibility in learning, with potential for new markets such as distant and part-time learners, and for more flexible schemes to accumulate credits before, during and after a traditional programme of study. | 30 |

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| 18 | O'Neill, K. Singh, G. & O'Donoghue, J. 2004. Implementing eLearning Programmes for Higher Education: A review of the literature. Journal of Information Technology Education Vol3 | 2004 | This paper is a consideration of the issues associated with the infrastructural aspects, pedagogic considerations and the need to associate the usefulness of technology to enhance the learning experience. | N/A | eLearning, Lifelong learning. | Literature review | For lecturers, eLearning programmes represent a change in teaching style. Elearning offers HE institutions all the benefits of a global consumer base. In order to reap these benefits, universities should carefully assess the implications of eLearning. Programmes should be of high quality and should meet the needs of the diverse student population. This should ensure the success of eLearning into the future, providing institutions with a much needed competitive edge. | Increasingly universities must provide quality and flexibility to meet the diverse needs of students - this will inevitably involve tailoring courses to suit differing educational needs and aspirations. | v3p313-323-131 |
| 19 | Harding, A. Kaczynski, D. Wood, L. 2012. Evaluation of blended learning: analysis of qualitative data. UniServe Science Blended Learning Symposium Proceedings. | 2012 | This paper will discuss the process of evaluation; give an example of evaluation and show how to analyse qualitative data. | N/A | Student learning, blended learning model - co-operative learning.. | Radar chart. Six radials are identified each with a question to quantify a measure. An evaluation of learning through using different theoretical underpinnings. Informal methods used similar to action research methods. Pragmatic evaluation philosophy. Qualitative data instead of quantitative data. - focus groups, interviews and open-ended questionnaires. | The paper has demonstrated that there are tools available to help investigate qualitative data and that these insights are useful for curriculum design. The data provided from the qualitative methods provide powerful evidence for the reflective practitioner to change their teaching. If we are to succeed with blended learning, we need to do more than implement learning changes. We need to make judgments about the worth of the reforms so that we will provide our students with the best possible outcomes. | By practicing blended learning the conveniences of online courses are gained without the loss of face-to-face contact. In so doing a learning environment is created that is richer than either a traditional face-to-face environment or a fully online environment. Students are free to choose their preferred learning style to some extent though some components may be compulsory. | 544556b10cf2d62c304d7d3a |
| 20 | Irvine, V. Code, J. & Richards, L. 2013. Realigning Higher Education for the 21st-century learner through multi-access learning. MERLOT Journal of Online Learning and Teaching 9(2). P172-186. | 2013 | The authors report results from a pilot study on one type of multi-access course, where students were able to choose their mode of access. In this case, remote students accessed the course via webcam and joined their on-campus classmates and instructor who were together face-to-face. Implications for multi-access learning in relation to the MOOC movement are discussed. | N/A | **Fostering a Community of Learners model (Four critical ideas: Agency, reflection, collaboration, and culture.** Hybrid learning, open education, multi-access learning. Personalized learning. Problem based learning. Learner-centered approach. | Mixed methods because the combination of quantitative and qualitative approaches provides a better understanding of research problems than either approach alone (Creswell & Plano Clark, 2007) | HEI need to refocus on realigning their educational mandate to support increased access to courses for the 21st century learner via alternative means. The authors argue that the multi-access framework is an alternative approach to the MOOC design for those who want access to higher learning. | With the introduction of online learning, the anytime/anywhere mantra taken up by many postsecondary institutions was a first step to meeting learner needs for flexibility, however, the choice and determination of delivery mode still resides with the institution and course instructors. Often seen in the marketing "lingo" of promotional materials fur such programs is "anytime, anywhere..." learning, yet Post Secondary Institutions (PSIs) have missed a critical component: learners want to connect in "any way." | irvine_0613 |
| 21 | Desantis, L. Pantalone, C. & Wiseman, F. 2010. Lecture Capture - An Emerging and Innovative Technology with Multiple Applications for Business Schools. Business Education Innovation Journal 2(2). | 2010 | The paper discusses the missed class problem, lecture capture, and some of the many applications of lecture capture in a business school setting. | LC is a methodology that is used to record a class session using audio, video, PowerPoint and computer screen activcity in any combination. | Not clear | Pilot implementation after institution bought LC technology. Pilot ended positive and full roll-out followed. Soon saw that LC works for athlete students that missed class, as well as other students and they started using LCs in a variety of ways to enhance learning for all students. Lecture capture project team. Did interviews before and during the pilot with faculty. Course reports were pulled for stats. Also sent out surveys to lecturers and students during the programme. | Faculty were scared that class attendance would drop, but this was not the case. Positive feedback from lecturers and students. Athletes and other students started watching the recdordings for revision and for catching up due to missed classes. Lecturers started using it when they were away at conferences and couldn't teach the class. And they used it for online review sessions to help students prep for exams. | N/A | 20 |

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| 22 | Porter, W.W. Graham, C.R. Bodily, R.G. & Sandberg, D.S. 2016. A qualitative analysis of institutional drivers and barriers to blended learning adoption in higher education. Internet and Higher Education 28. p17-27. | 2016 | In this paper, the authors applied that framework as well as Rogers' (2003) diffusion of innovations theory to determine the degree to which institutional strategy, structure, and support measures facilitate or impede BL adoption. | N/A | Robers'. 2003. Diffusion of innovations framework. Blended learning, hybrid learning, adoption model and HE policy | The authors published the survey results in a prior article. The current article explores the results of the interviews. - Quantitative data. Mixed-methods study | Universities should keep in mind the importance of consistently functioning infrastructure, group training, sufficient teachnological support and clear BL guidelines. | N/A | A qualative analysis of institutional droivers |
| 23 | Ryan, A. & Tilbury, D. 2013. Flexible Pedagogies: New pedagogical ideas. Preparing for the future. The Higher Education Academy. | 2013 | The study forms part of a multi-strand project on flexible pedagogies funded by the HEA. This strand on 'new pedagogical ideas' positions the relationship between flexibility and pedagogy. | N/A | Flexible learning and flexible pedagogy | Inquiry from March to July 2013. 1st step was a lit review on scholarly literature, enhancement initiatives and policy documentation in HE T&L in UK. 2nd step was project based through consultations with key informants actively involved in HE t&L. | It has uncovered an overall context in which the 'why' the fundamental rationale for embedding flexible pedagogies - is now far more dependent on the | Flexible learning is about enabling choice and responsiveness in the pace, place and mode of learning. Flexible learning has often been viewed mainly in terms of learning delivery, but in pedagogical thinking and practice, flexibility can and should be considered as an attribute of both learners and educators and characterised as an institutional education strategies. | 29 |
| 24 | Coates, H. James, R. & Baldwin, G. 2005. A critical examination of the effects of learning management systems on university teaching and learning. Tertiary Education & Management (11) p19-36 | 2005 | This paper presents a borad, critical examination of the potential impact of these online systems on teaching and learning in universities. In particular the effects of LMS on teaching practices, on student engagement, on the nature of academic work and on the control over academic knowledge. In this paper, we explore implications arising from the incorporation of LMS into university T&L programmes. | N/A | Not clear | Literature review | These online systems have tended to attract the attention of technicians, administrators and a typically small number of academic staff with a direct interest in online learning. Institutional managers and leaders need to play key roles in discussion with different stakeholders and ensure that staff are educated in online pedagogy. Institutional leaders should provide support fo the staff who use the LMS. **The LMS should be used to augment and complement rather than substitute for an institution's core teaching objectives.** Institutions should initiate reviews and investigations through ongoing evaluation of the educational and organisational effects of online learning systems. | N/A | 16 |
| 25 | Greenberg, A.D. & Nilssen, A.H. 2009. The New Imperative for Lecture Capture Systems in Higher Education. Wainhouse research white paper. | 2009 | LC appears to be entering the realm of HE fast. While learners are clamoring for LC solutions at many colleges and universities, how are educators assessing and acknowledging te value. To find out, Wainhouse Researcdh recently conducted a survey for TechSmith to examine the perceived benefits to institutions of HE today and in the future. The results are in this White Paper. | Any technology that allows instructors or presenters to record what happens in their lecture hall and make it available digitally. | Not clear | Survey sent to distance education professionals and affiliated IT/support staff primarily at HEIs about exploring educational technologies and lecture capture solutions. | LC has moved from the exotic to begin to gain a foothold in increasing numbers of institutions of higher education. The attitudes towards LC solutions were captured in-depth - LC solutions have been well or very well accepted by almost half of students and one third of faculty. They also explored the appeal of LC to students and lecturers - Students say it is beneficial because 1) to review class material, or 2) to review missed classes. 75% say their faculty find value in LC and the benefits are: The ability for students to review missed classes and watch classes on demand to fit their schedules, the lecturers also have the ability to work with and reach remote learners. | 71% of students said LC is beneficial because they can watch classes on-demand to fit student lifestyles and schedules. | 13 |

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| 26 | New Media Consortium, Horizon Report. 2017 Higher Education Edition. | 2017 | Report on the 5 year horizon for HEI, which trends and technology developments will drive educational change, what the critical challenges are and how can we strategize solutions. | A lecture capture pilot conducted by the university of Cambridge aims to improve inclusivity for students with disabilities where faculty will post course content online in a variety of formats including audio and video. | Not clear | The research behind the NMC Horizon Report: 2017 HE edition is jointly conducted by the New Media Consortium and the Educause Learning Initiative and Educause program | Top 10 highlights capture the big picture themes of educational change | The affordances blended learning offers are now well understood, and its flexibility, ease of access, and the integration of sophisticated multimedia and technologies are high among the list of appeals. Law students liked that the blended approach allowed them to review lectures and reading materials online so they could focus on more difficult topics when they came together F2F - it provided them the flexibility to attain a degree while supporting themselves through part-or full-time jobs. | 2017-nmc-horison-report-he-EN |
| 27 | Leoni, K. & Lichti, S. 2009. Lecture Capture in Higher Education; Academic and Research Technologies. Northwestern University - Information Technology. | 2009 | As we better understand the services and technology involved in supporting the LC material for students our goal is to implement a cost effective and scalable solution. With this in mind, we thought it would be useful to understand the demand, direction and best practices of lecture capture services at other institutions. | Recorded lecture material outside of students' regularly scheduled classroom hours for review. | Not clear | survey to various lists and groups from all over the world | Few have implemented LC beyond a small number of classrooms. A lack of standardization, no firmly established best practices for lecture content collection, manipulation, or delivery. IT appears to be leading the implementation and management of these services, although a third of the respondents indicate LC is managed by faculty/schools/departments. Almost half share content via their CMS. Just over half the respondents record video as part of the captured content. The other half focus on audio only, or audio and content. Only a quarter have an automated system for lecture capture recording. Most needs hands-on support. | N/A | Lecture capturing in higher ed |
| 28 | Karnad, A. 2013. A report reviewing recent research into the use of lecture capture technology in higher education, and its impact on teaching methods and attendance. | 2013 | This report aims to explore student use of recorded lectures by reviewing literature on four main research questions. | N/A | Not clear | Literature review | Students find lecture recordings to be a useful tool and mainly use them to make up for missed lectures and to prepare for assessments which explains student access patterns to LRs. Having access to recorded lectures has generally not been found to have any significant effect on students' results and there seems to be little evidence that students actually believe that having access to recorded lectures is the main cause or incentive to miss lectures. **Whilst LC technology offers many benefits and pitfalls, its current role in HE remains a supportive one in relation to live lectures, which are yet valued higher by students than their recorded equivalents.** | N/A | Karnad_Student_use_recorded_2013_author |
| 29 | Yeung, A. Raju, S. & Sharma, M.D. 2016. Online lecture recordings and lecture attendance: Investigating student preferences in a large first year psychology course. Journal of Learning Design 9(1) | 2016 | This paper reports on such an investigation with a cohort of 1450 first year psychology students' who indicated whether they frequently attended lectures or not. | Web-based lecture technologies digitally record lectures for students to access on demand. | The impact of Web-based lecture technologies | A survey of 25 questions based on Gosper's study was developed. The first 7 questions sought demographic information and several asked for open-ended responses. | Non-frequest attendees were more likely not to use LRs to make up a missed lecture than frequent attendees. In the last week of the semester 29% of students reported not yet accessing LRs. Students indicated that they intended to use LRs because it's helpful and they would be adversely affected if recoredings were not available. Students are passionate about LRs. Analytics show that after lecture 7 each LR attracted 600 or less unique visits supporting the finding that most students make strategic use of LRs available within the blended learning environment. | Despite tenuous, unclear and often contradictory findings, what is clear is that LRs are becoming increasingly prevalent and that they do offer advantages such as flexibility and choice. | 243-657-1-PB |

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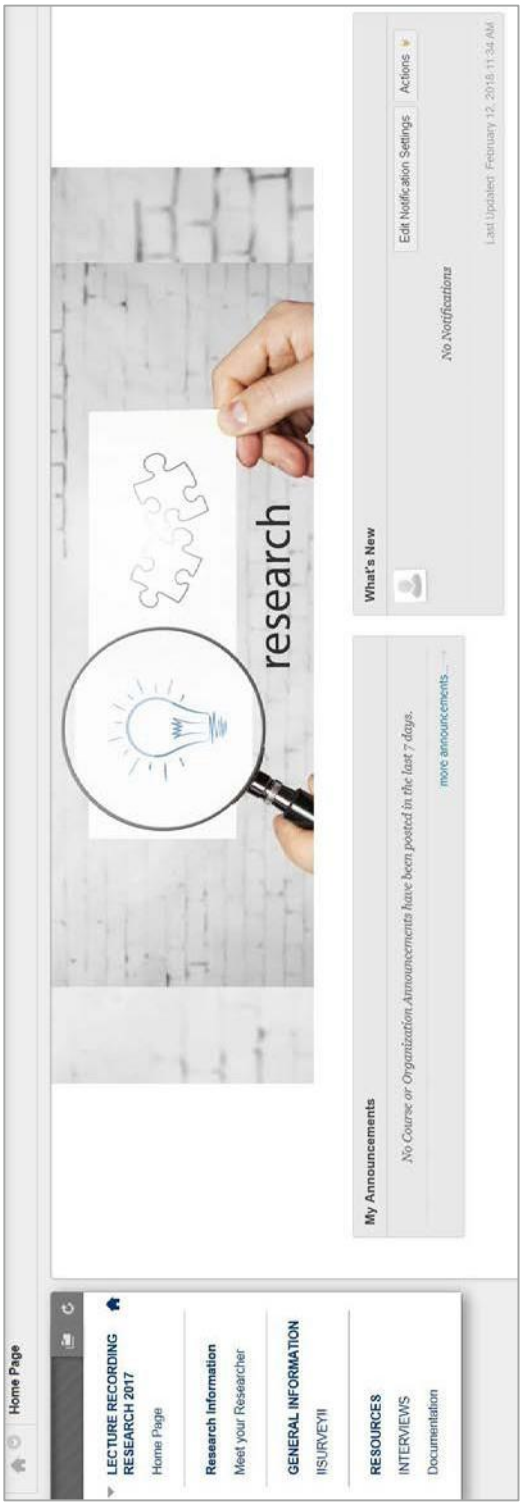
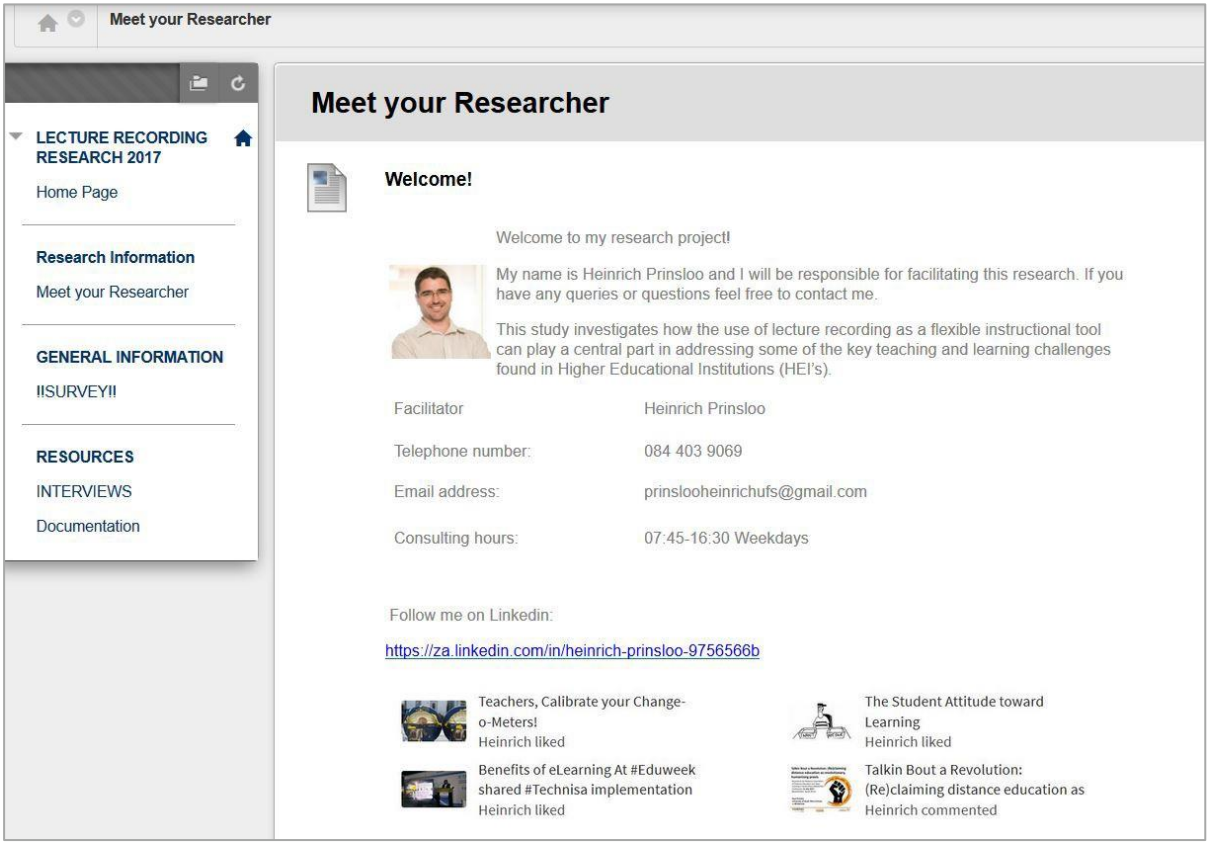
| 30 | Bennett, E. & Maniar, N. 2007. Are videoed lectures an effective teaching tool? | 2007 | Previous work has focused heavily on discussing the benefits of videoing face-to-face lectures. To provide educators with a more balanced view, this short paper highlights the reasons why this activity may not be worthwhile. This paper seeks to redress the balance by putting technological issues aside, and briefly review the benefits and highlights why videoed lectures may not be a worthwhile activity. | Videoed lectures. | Not clear | Literature review | Previous study: LR is effective to grab a student's attention and motivate them to learn and when a highly realistic depiction of reality is important. But one growing use of video with in HE falls into it's own category namely videoing of live face-to-face lectures for students to watch again later. Videoing lectures is a growing trend. It still has an educational benefit. Ultimately a student only has a limited time to spend on a course outside the class. While using videoed lectures does have some merits, a student's time is be3tter spent answering questions that require them to do some independent study and focus their attention on key aspects of the course. | N/A | 21 |
| 31 | Topale, L. 2016. The strategic use of lecture recordings to facilitate an active and self-directed learning approach. BMC Medical Education 16 | 2016 | The primary aim of this study was to gain a better understanding of how students were using recorded lectures in their learning and how their study habits have been influenced by the technology. | recorded lectures | Active learning, Strategic learning and learning strategies, Self-directed learning | Survey of 27 closed ended, multiple choice questions and one open ended item. The survey was designed to explore students' perceptions of how recorded lectures affected their choices regarding class participation and impacted their learning and to gain an understanding of how recorded lectures facilitated a strategic, active learning process. | Findings revealed that LR had little influence on students' choices to participate, and that the perceived benefits of integrating recorded lectures into study practices were related to their facilitation of and impact on efficient, active, and self-directed learning. | N/A | art%3A10.1186%2Fs12909-016-0723-0 |
| 32 | Selwyn, N. 2016. Digital downsides: exploring university students' negative engagements with digital technology. Teaching in Higher Education 21(8). P1006 - 1021 | 2016 | This paper explores the rather more messy realities of students' engagements with digital technology. It focuses on the aspects of digital technology use that students see as notably unhelpful. The paper considers how discussions of digital technology might better balance enthusiasms for what we know might be achieved through technology enabled learning with the often unsatisfactory realities of students' encounters with digital technology. | N/A | Technology enabled learning | Survey of 1658 undergrad students. Open-ended questions were also asked. | The overarching conclusion relates to the need for everyone with an interest in digital technology use in HE to adopt more realistic and grounded understandings and expectations. | N/A | Digital downsides exploring university students negative engagements with digital technology |
| 33 | Paas, F. Renkle, A. & Sweller, J. 2010. Cognitive Load Theory and Instructional Design: Recent Developments. Educational Psychologist, 38(1), P2-4 | 2010 | An investigation into cognitive processes and instructional design | N/A | Cognitive Load Theory and Instructional Design | Literature review | The articles in this special issue demonstrate that CLT is continuing its role of using cognitive psychology principles to generate novel instructional design procedures. | N/A | Cognitive Load Theory and Instructional Design recent developments |

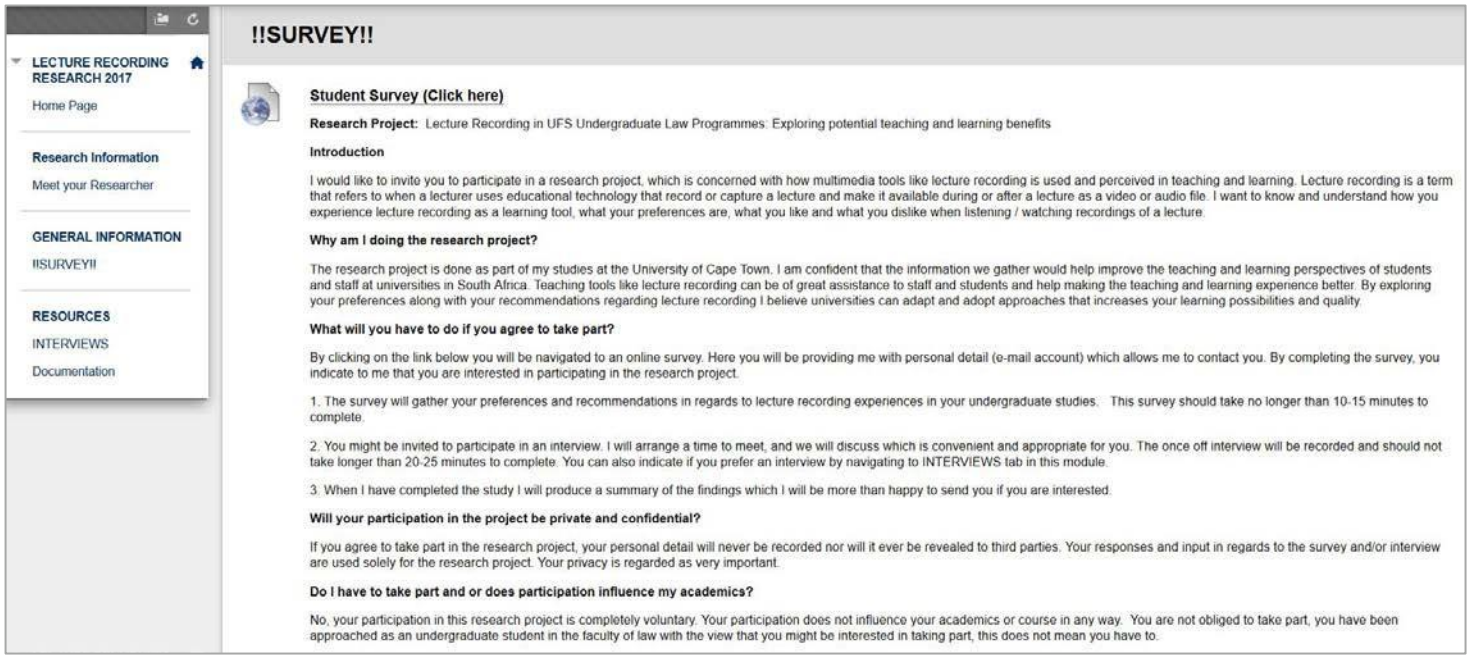
| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 34 | Danielson, J. Preast, V. Bender, H. & Hassall, L. 2014. Is the effectiveness of lecture capture related to teaching approach or content type? Computers & Education 72. p121-131 | 2014 | The purpose of two related studies was to explore the relationships between course characteristics (teaching approach, content type, and level of curricular coordination), lecture-capture implementation, and learning in a veterinary medical education environment. | Capture audio and video from traditional classroom lectures and automatically make those recordings available to enrolled students. These captured lectures vary in nature from relatively sophisticated video and audio productions to simple audio recordings that accompany a separate file containing presentation slides. | Computer-mediated communication. Team Based Learning | Survey of lecturers and students about their perception of lecture-capture use and impact on learning. (Part1). Students participated in comparing scores on a standardized test of basic science knowledge among groups experiencing various levels of lecture-capture implementation. (Part2). Mixed-methods (focus group and survey ) approach. | A greater percentage of students than faculty perceived lecture capture as beneficial to learning. Higher views of captured lectures were associated with higher test scores in disciplines that relied most heavily on a straight-lecture teaching approach and had a basic science-research teaching context. The number of lecture-capture views was not significantly related to test scores in disciplines that relied less heavily on straight lecture for instruction and had a basic science-applied teaching context. Lecture-capture technology, in this context, primarily captures what the instructor does; other interactions are lost. | N/A | 1-s2.0-s0360131513003011 |
| 35 | Van Merriënboer, J.J.G. & Sweller, J. 2005. Cognitive Load Theory and Complex Learning: Recent Developments and Future Directions. Educational Psychology Review 17(2). P147-178 | 2005 | This article discusses recent developments in CLT related to the current view in instructional design that real-life tasks should be the driving force for complex learning. | N/A | Cognitive Load Theory (CLT) | Review of experimental studies to illustrate recent developments in the CLT by linking cognitive processes to the processes used by biological evolution. | By emphasizing both biological evolution and human cognition constitute variants of a single natural information processing system, it is possible to place both cognitive architecture and instructional design in a wider, more sophisticated context. Because modern instructional theories often incorporate real-life learning tasks as a driving force, cognitive load considerations are becoming increasingly important. | N/A | Merrienboer |
| 36 | Salazar, J. 2010. Staying Connected: Online Education Engagement and Retention using Educational Technology Tools. Supplement Clinical Laboratory Science 23(3). P3-53 to 3-58 | 2010 | The objective of this article is to inform educators about the use of currently available educational technology tools to promote student retention, engagement and interaction in online courses. | Video lecture captures. The instructor initiate recording software before beginning their lecture and then the software provides video feeds of the instructor and the presentation. The captured content is uploaded to a server that makes the content available to students within an hour. | Student Engagement and Retention | Literature review on online education, educational technology, engagement and retention | Students now expect to use technology in all aspects of their lives, including education. Educational technology tools convert the online learning environment into a canvas ideal for interaction. | Students are then able to review the captured materials anytime, anywhere. Students who have logins to the LMS are able to view the lectures from any computer device connected to the internet. And they can download the audio/video content as podcasts and vodcasts to off-line computers and mobile devices thus allowing them to access the content without an internet connection. | Engagement |

**Appendix B – Email invitation/announcement distributed**

*A few screenshots of what the students could see in this organisation:*




Meet your Researcher
LECTURE RECORDING RESEARCH 2017
Home Page
Research Information
Meet your Researcher
GENERAL INFORMATION
!!SURVEY!!
RESOURCES
INTERVIEWS
Documentation
Meet your Researcher
Welcome!
Welcome to my research project!
My name is Heinrich Prinsloo and I will be responsible for facilitating this research. If you have any queries or questions feel free to contact me.
This study investigates how the use of lecture recording as a flexible instructional tool can play a central part in addressing some of the key teaching and learning challenges found in Higher Educational Institutions (HEI's).
Facilitator Heinrich Prinsloo
Telephone number: 084 403 9069
Email address: prinslooheinrichufs@gmail.com
Consulting hours: 07:45-16:30 Weekdays
Follow me on Linkedin:
https://za.linkedin.com/in/heinrich-prinsloo-9756566b
Teachers, Calibrate your Change-o-Meters!
Heinrich liked
The Student Attitude toward Learning
Heinrich liked
Benefits of eLearning At #Eduweek shared #Technisa implementation
Heinrich liked
Talkin Bout a Revolution: (Re)claiming distance education as
Heinrich commented


LECTURE RECORDING RESEARCH 2017
Home Page
Research Information
Meet your Researcher
GENERAL INFORMATION
!!SURVEY!!
RESOURCES
INTERVIEWS
Documentation
!!SURVEY!!
Student Survey (Click here)
Research Project: Lecture Recording in UFS Undergraduate Law Programmes: Exploring potential teaching and learning benefits
Introduction
I would like to invite you to participate in a research project, which is concerned with how multimedia tools like lecture recording is used and perceived in teaching and learning. Lecture recording is a term that refers to when a lecturer uses educational technology that record or capture a lecture and make it available during or after a lecture as a video or audio file. I want to know and understand how you experience lecture recording as a learning tool, what your preferences are, what you like and what you dislike when listening / watching recordings of a lecture.
Why am I doing the research project?
The research project is done as part of my studies at the University of Cape Town. I am confident that the information we gather would help improve the teaching and learning perspectives of students and staff at universities in South Africa. Teaching tools like lecture recording can be of great assistance to staff and students and help making the teaching and learning experience better. By exploring your preferences along with your recommendations regarding lecture recording I believe universities can adapt and adopt approaches that increases your learning possibilities and quality.
What will you have to do if you agree to take part?
By clicking on the link below you will be navigated to an online survey. Here you will be providing me with personal detail (e-mail account) which allows me to contact you. By completing the survey, you indicate to me that you are interested in participating in the research project.
1. The survey will gather your preferences and recommendations in regards to lecture recording experiences in your undergraduate studies. This survey should take no longer than 10-15 minutes to complete.
2. You might be invited to participate in an interview. I will arrange a time to meet, and we will discuss which is convenient and appropriate for you. The once off interview will be recorded and should not take longer than 20-25 minutes to complete. You can also indicate if you prefer an interview by navigating to INTERVIEWS tab in this module.
3. When I have completed the study I will produce a summary of the findings which I will be more than happy to send you if you are interested.
Will your participation in the project be private and confidential?
If you agree to take part in the research project, your personal detail will never be recorded nor will it ever be revealed to third parties. Your responses and input in regards to the survey and/or interview are used solely for the research project. Your privacy is regarded as very important.
Do I have to take part and or does participation influence my academics?
No, your participation in this research project is completely voluntary. Your participation does not influence your academics or course in any way. You are not obliged to take part, you have been approached as an undergraduate student in the faculty of law with the view that you might be interested in taking part, this does not mean you have to.

## Appendix C – Informed consent form for students

The announcement that was sent to the students:

Welcome to this module. Feel free to navigate through the module to learn more about the research project. (Resources)

**Research Project:** Lecture Recording in UFS Undergraduate Law Programmes: Exploring potential teaching and learning benefits

**Introduction** I would like to invite you to participate in a research project, which is concerned with how multimedia tools like lecture recording is used and perceived in teaching and learning. Lecture recording is a term that refers to when a lecturer uses educational technology that record or capture a lecture and make it available during or after a lecture as a video or audio file. I want to know and understand how you experience lecture recording as a learning tool, what your preferences are, what you like and what you dislike when listening / watching recordings of a lecture.

**Why am I doing the research project?** The research project is done as part of my studies at the University of Cape Town. I am confident that the information we gather would help improve the teaching and learning perspectives of students and staff at universities in South Africa. Teaching tools like lecture recording can be of great assistance to staff and students and help making the teaching and learning experience better. By exploring your preferences along with your recommendations regarding lecture recording I believe universities can adapt and adopt approaches that increases your learning possibilities and quality.

**What will you have to do if you agree to take part?** By clicking on the link below you will be navigated to an online survey. Here you will be providing me with personal detail (e-mail account) which allows me to contact you. By completing the survey, you indicate to me that you are interested in participating in the research project.

1. The survey will gather your preferences and recommendations in regards to lecture recording experiences in your undergraduate studies. This survey should take no longer than 10-15 minutes to complete.
2. You might be invited to participate in an interview. I will arrange a time to meet, and we will discuss which is convenient and appropriate for you. The once off interview will be recorded and should not take longer than 20-25 minutes to complete. You can also indicate if you prefer an interview by navigating to INTERVIEWS tab in this module.
3. When I have completed the study I will produce a summary of the findings which I will be more than happy to send you if you are interested.

**Will your participation in the project be private and confidential?** If you agree to take part in the research project, your personal detail will never be recorded nor will it ever be revealed to third parties. Your responses and input in regards to the survey and/or interview are used solely for the research project. Your privacy is regarded as very important.

**Do I have to take part and or does participation influence my academics?** No, your participation in this research project is completely voluntary. Your participation does not influence your academics or course in any way. You are not obliged to take part, you have been approached as an undergraduate student in the faculty of law with the view that you might be interested in taking part, this does not mean you have to.

**Where do I start?**

***Reminder:*** You always have the right to withdraw your consent as well as the right not to answer any or some questions in any survey or interview.

By clicking here and providing me with your personal contact details your survey will start.

Kind regards,

**Contact information:**

**Researcher:** Heinrich Prinsloo, University of Cape Town prinslooheinrichufs@gmail.com

***Supervisor:*** Dr Cheryl Brown, University of Cape Town cheryl.brown@uct.ac.za

***Co Supervisor*** Dr Nicola Pallitt, University of Cape Town Nicola.pallitt@uct.ac.za

**Consent Form**

**Title:** Studying the effect of lecture capturing as a flexible teaching tool at the University of the Free State.

**Researcher: Heinrich Prinsloo**

I volunteer to participate in the research project conducted by Heinrich Prinsloo from the University of the Cape Town. I understand that this research project is designed to study the effect of lecture capturing as a flexible teaching tool at the University of the Free State.

As a student/staff member at the University of the Free State, I understand that I am being invited to take part in a survey and/or interview. I agree to the following terms and conditions:

- My input and participation in completing the survey or engaging in the interview is voluntary.
- The survey will take approximately_____minutes to complete. I do not have to complete all the questions if I do not want to.
- If I participate in the interview it will be recorded. If I choose not to be recorded I must make this clear before the interview commence. The interview will take approximately_____minutes to complete.
- If I feel uncomfortable in any way during the interview or survey I have the right to decline to answer any question or to exit the session.
- I understand that the researcher will not identify me by name in any reports using the information obtained from the survey or the interview. My confidentiality as a participant of this research will remain secure. Subsequent uses of recordings and data will be subject to standard data use policies which protect anonymity of individuals and institutions.
- If I choose to be interviewed, I have the right to view and comment on the transcribed interview data before the findings are analysed.
- I have read and understand the participant information sheet provided to me. I have had all my questions answered to my satisfaction, and I voluntarily agree to participate in this study.

By clicking next I hereby agree to the terms and conditions and to participate in the digital **survey** for this study. (*digital survey)*
By signature I hereby agree to the terms and conditions and to participate in the **survey** for this study. (*hard copy survey)*
By signature I hereby agree to the terms and conditions and to participate in the **interview** for this study. (*interview)*

Name _____

Signed _____

Date _____

**Appendix D – Information sheet for students**

**Information Sheet for Participants** **Research Project:** Studying the effect of lecture capturing as a flexible teaching tool at the University of the Free State.

**Introduction** I would like to invite you to participate in a research project, which is concerned with how you learn when multimedia tools like lecture capturing is used. I want to know and understand how you experience lecture captures as a learning tool, what your preferences are, what you like and what you dislike when listening / watching recordings of a lecture.

**Why am I doing the research project?** The research project is done as part of my studies at the University of Cape Town. I am confident that the information we gather would help improve the teaching and learning perspectives of students and staff at universities in South Africa. Flexible teaching tools like lecture capturing can be of great assistance to staff and students during times of lecture disruptions. (it does not matter how these disruptions are caused whether by strikes, sickness of a lecturer or student, power failure etc.) By exploring your preferences along with your recommendations regarding lecture capturing I believe universities can adapt and adopt approaches that increases your learning possibilities.

**What will you have to do if you agree to take part?** By clicking on the link below you will be navigated to an online survey. Here you will be providing me with personal detail which allows me to contact you as this has indicated to me that you are interested in participating in the project. This should not take longer that 2-3 minutes to complete.

After I have received your personal detail I will send you information on the following:

1. I will send you a link to a survey to complete. The survey will gather your preferences and recommendations in regards to lecture capture experiences in your undergraduate studies. This survey should take no longer than 10-15 minutes to complete.

2. You might be invited to participate in an interview. I will arrange a time to meet, and we will discuss which is convenient and appropriate for you. The once off interview will be recorded and should not take longer than 20-25 minutes to complete.

3. When I have completed the study I will produce a summary of the findings which I will be more than happy to send you if you are interested.

**Will your participation in the project be private and confidential?** If you agree to take part in the research project, your personal detail will never be recorded nor will it ever be revealed to third parties. Your responses and input in regards to the survey and/or interview are used solely for the research project. Your privacy is regarded as very important.

**Do I have to take part and or does participation influence my academics?** No, your participation in this research project is completely voluntary. Your participation does not influence your academics or course in any way. You are not obliged to take part, you have been approached as an undergraduate student in the faculty of Law with the view that you might be interested in taking part, this does not mean you have to.

**Where do I start?** By clicking on the following link and providing me with your personal contact details you are indicating your interest.

**Contact information:** **Researcher:** Heinrich Prinsloo, University of Cape Town, Prinslooh1@ufs.ac.za **Supervisor:** Dr Cheryl Brown, University of Cape Town, cheryl.brown@uct.ac.za

## Appendix E – Student survey

Mark as shown: ☐ ☒ ☐ ☐ ☐ Please use a ball-point pen or a thin felt tip. This form will be processed automatically.

Correction: ☐ ■ ☐ ☒ ☐ Please follow the examples shown on the left hand side to help optimize the reading results.

### 1. Background information

1.1 UFS Email address:

1.2 Please indicate what undergraduate program you are enrolled for in the Faculty of Law: ☐ LLB Degree ☐ LLB extended Degree ☐ Other

1.3 If you chose 'other' in the previous question, please specify:

1.4 Please indicate what mode of delivery you are enrolled for: ☐ Residential (I attend classes face to face) ☐ E-learning (I attend classes online)

1.5 Please indicate your language background: ☐ English is my first language ☐ English is my first additional language ☐ English is my second additional language ☐ English is my third additional language ☐ Other

1.6 If you chose 'other' in the previous question, please specify:

1.7 Have you ever previously accessed online recorded lectures or seminars prior to your studies at the university? ☐ Yes ☐ No

1.8 If you chose 'Yes' in the previous question, please specify:

1.9 I use the following device/s to access lecture recordings:

☐ Laptop ☐ Mobile device ☐ Tablet
☐ Computer Lab desktop ☐ Desktop at home ☐ Other

1.10 If you chose 'Other' in the previous question, please specify:

### 2. Scaled questions

| | | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|---|---|---|---|---|---|---|
| 2.1 | I prefer my lectures to be an audio or video recording instead of a face to face lecture presented in class. | ☐ | ☐ | ☐ | ☐ | ☐ |
| 2.2 | Having lectures recordings online would affect how often I attend class. | ☐ | ☐ | ☐ | ☐ | ☐ |
| 2.3 | Access to lecture recordings help me to better revise my work, than I would with only face to face lectures. | ☐ | ☐ | ☐ | ☐ | ☐ |
| 2.4 | Pronunciation and use of language sometimes hinders my understanding in face to face lectures. | ☐ | ☐ | ☐ | ☐ | ☐ |

## 2. Scaled questions [Continue]

| | | | | | | |
|---|---|---|---|---|---|---|
| 2.5 | I often rewind, replay or review an audio or video recording, because I lack the vocabulary or do not understand certain words or sentence constructions. | ☐ | ☐ | ☐ | ☐ | ☐ |
| 2.6 | I download lecture recordings and replay them offline. | ☐ | ☐ | ☐ | ☐ | ☐ |
| 2.7 | Data cost is a big factor that influences the frequency that I view lecture recordings. | ☐ | ☐ | ☐ | ☐ | ☐ |
| 2.8 | Poor connectivity is a big factor that influences the frequency that I view lecture recordings. | ☐ | ☐ | ☐ | ☐ | ☐ |
| 2.9 | I think that captions, subtitles and transcripts are essential in lecture recordings. | ☐ | ☐ | ☐ | ☐ | ☐ |
| 2.10 | I would prefer all my class lectures to be online as lecture recordings and face to face class to be used for discussions, tutoring and other learning activities. | ☐ | ☐ | ☐ | ☐ | ☐ |
| 2.11 | I value and desire flexibility in my learning. | ☐ | ☐ | ☐ | ☐ | ☐ |
| 2.12 | I think lecture recordings allow me a more flexible learning experience. | ☐ | ☐ | ☐ | ☐ | ☐ |
| 2.13 | Lecture recordings impact my learning experience positively. | ☐ | ☐ | ☐ | ☐ | ☐ |
| 2.14 | Lecture recordings afford me various different learning approaches to content vs face to face lectures. | ☐ | ☐ | ☐ | ☐ | ☐ |

## 3. Further information

| | | | | |
|---|---|---|---|---|
| 3.1 | Lecture recordings without captions, subtitles and transcripts: | ☐ does not really impact my learning experience<br>☐ does not make a difference to my learning experience | ☐ affects and impair my learning experience | ☐ would help and be a useful additional resource to my learning experience |
| 3.2 | What statement best describes lecture recordings to you? | ☐ It helps me to memorize content<br>☐ Other: | ☐ It helps me to construct new content | ☐ It is simple transmission of information |
| 3.3 | If you chose 'other' in the above question, please specify: | | | |
| 3.4 | Do you mind being recorded while asking a question in a lecture recording? | ☐ Yes<br>☐ As long as it is just distributed to the class | ☐ No | ☐ Not really |

## Appendix F – Interview guide

**Interview Guide**

The purpose of this interview is to get a better understanding of what lecturers think about different aspects of using lecture captures in their teaching and learning pedagogy. The answers discussed during the interview will be used in a Masters dissertation. This will involve some of the answers being shared with the relevant supervisors. This will be an informal, conversational interview and will take approximately 1 hour. The interview will be recorded and transcribed afterwards. People will also have a chance to give any additional comments in writing afterwards which can be sent those to prinslooh1@ufs.ac.za.

**Terminology**

- **Lecture Capturing:** Technology tools that allows recording of content delivery or on-screen activity in audio/video format.
- **Pedagogy:** The method and practice of teaching by one person designed to enhance learning in another.
- **Blended Learning:** A combination of face-to-face and online class delivery.
- **Cognitive theory of multimedia learning:** There are two separate channels for processing information (auditory and visual); each channel has a limited capacity, and learning is an active process of filtering, selecting, organizing, and integrating information based upon prior knowledge.
- **Multimedia principle:** People learn more deeply from words and pictures than from words alone.

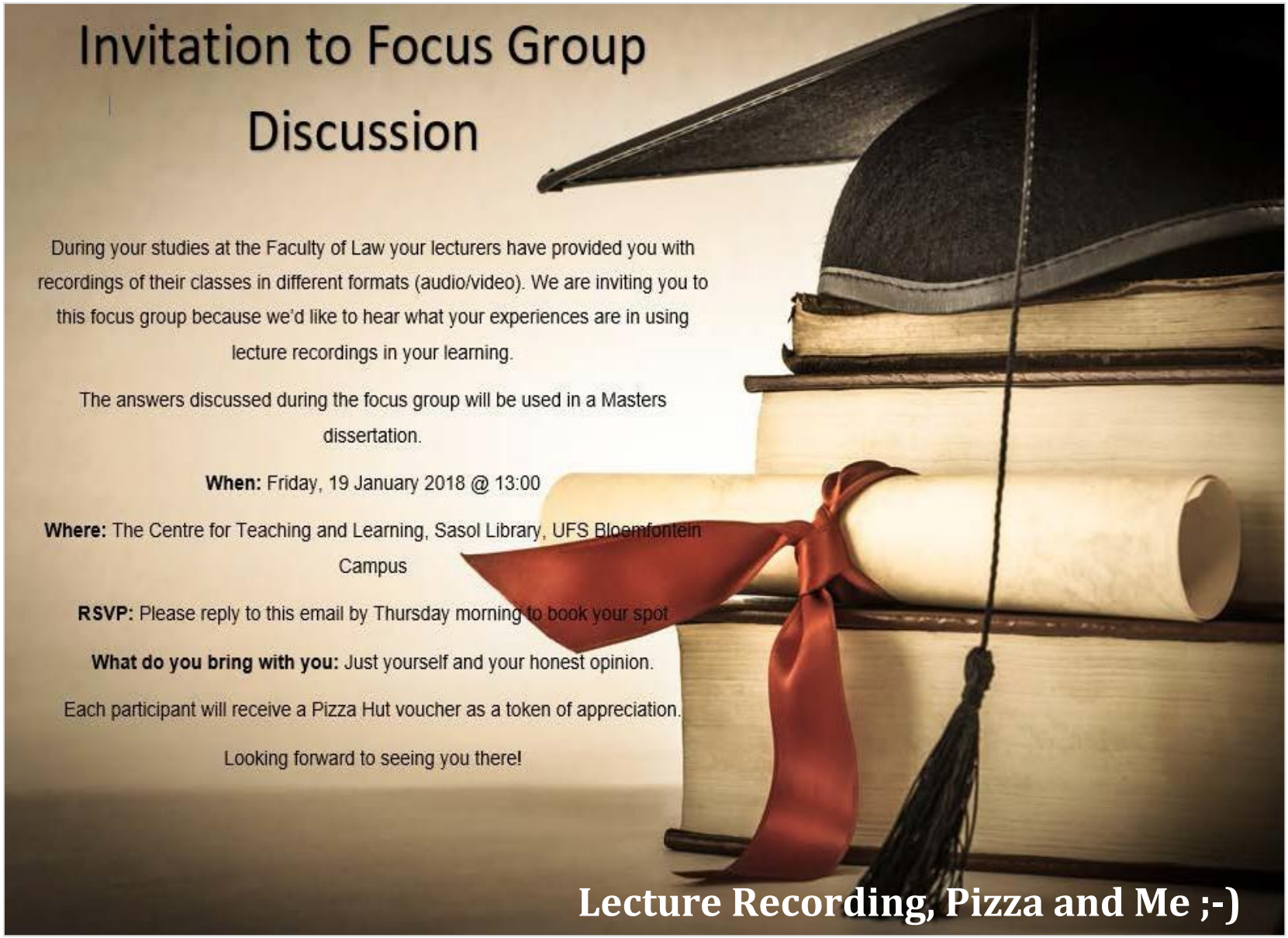
**Questions**

*I would like to make sure I don't miss any of the information shared during this interview. Will it be okay if I record the interview? Before I start asking you all the questions, do you have any questions for me?*

- What do you understand under the terms 'Lecture Captures'? (probe / warm-up question)

1. What do you think about using lecture captures in your teaching?
2. Have you ever asked your students what they think about you using lecture captures in your teaching and their learning process? (probe question)
3. How do you think your students feel about receiving lecture captures?
4. Do you make your own videos/audios? (probe question)
5. How do you use lecture capturing in your teaching?
6. Do you think using lecture captures can help you in being more flexible in your teaching pedagogy?
7. What do you understand under the terms 'Blended learning'? (probe question)
8. In what way can lecture captures add value to a blended learning environment?
9. What do you understand multimedia is? (probe question)
10. Looking at Mayer's Cognitive Theory of Multimedia Learning: In what way can the CTML help us measure lecture captures effectiveness?
11. Could this interview help you understand the benefits of using lecture captures for both you and your students? (Final question as closure)

•


Invitation to Focus Group Discussion
During your studies at the Faculty of Law your lecturers have provided you with recordings of their classes in different formats (audio/video). We are inviting you to this focus group because we'd like to hear what your experiences are in using lecture recordings in your learning.
The answers discussed during the focus group will be used in a Masters dissertation.
When: Friday, 19 January 2018 @ 13:00
Where: The Centre for Teaching and Learning, Sasol Library, UFS Bloemfontein Campus
RSVP: Please reply to this email by Thursday morning to book your spot
What do you bring with you: Just yourself and your honest opinion.
Each participant will receive a Pizza Hut voucher as a token of appreciation.
Looking forward to seeing you there!
Lecture Recording, Pizza and Me ;-)

## Appendix H – Staff survey

**Good day colleagues**,

I would like to invite you to participate in a research project, which is concerned with how multimedia tools like lecture recording is used and perceived in teaching and learning. Lecture recording is a term that refers to when a lecturer uses educational technology that record or capture a lecture and make it available during or after a lecture as a video or audio file. I want to know and understand how you experience lecture recording as a teaching tool.

**Why am I doing the research project?**

The research project is done as part of my studies at the University of Cape Town. I am confident that the information we gather would help improve the teaching and learning perspectives of students and staff at universities in South Africa. Teaching tools like lecture recording can be of great assistance to staff and students and help making the teaching and learning experience better. By exploring your preferences along with your recommendations regarding lecture recording I believe universities can adapt and adopt approaches that increases your learning possibilities and quality.

**What will you have to do if you agree to take part?**

By clicking on the link below you will be navigated to an online survey.

http://surveys.ufs.ac.za/evasys/online.php?p=2CDE8

1. The survey will gather your preferences and recommendations in regards to lecture recording experiences in your teaching. This survey should take no longer than 10-15 minutes to complete.

2. You might be invited to participate in an interview. I will arrange a time to meet, and we will discuss which is convenient and appropriate for you. The once off interview will be recorded and should not take longer than 20-25 minutes to complete.

3. When I have completed the study I will produce a summary of the findings which I will be more than happy to send you if you are interested.

Thank you for your contribution!

Kind regards,

UNIVERSITY OF THE FREE STATE
UNIVERSITEIT VAN DIE VRYSTAAT
YUNIVESITHI YA FREISTATA

**Heinrich Prinsloo**

Learning/ Instructional Designer
PO Box 339, Bloemfontein 9300, Republic of South Africa
051 401 7325
27609933881
PrinslooH1@ufs.ac.za

Mark as shown: ☐ ☒ ☐ ☐ ☐ Please use a ball-point pen or a thin felt tip. This form will be processed automatically.

Correction: ☐ ■ ☐ ☒ ☐ Please follow the examples shown on the left hand side to help optimize the reading results.

## 1. Information

Dear participant,

This study investigates how the use of lecture recording as a instructional tool can play a part in addressing some of your teaching and learning challenges found in your day to day teaching practices.

The term *lecture recording* refers to educational technology (ET) tools that can be used to record or capture a lecture and make it available during or after a lecture as a video or audio file. Within the ET sphere, lecture recording is also commonly categorised as a multimedia and or collaborative technology (Lamb, 2015).

Within the context of the study the term *lecture recording* will be attributed to any action or endeavour referring to the recording of a lecture; whether that recording is an audio only or a video recording.

Click on 'Next' to start with the survey.

## 2. Your opinions and perceptions

2.1 Have you used lecture recordings as a tool in your teaching before? ☐ Yes ☐ No

2.2 If you chose 'Yes' in the previous question, please specify where and how you used it:

2.3 On average, how satisfied have you been with this method? ☐ Very Dissatisfied ☐ Dissatisfied ☐ Neutral ☐ Satisfied ☐ Very Satisfied

2.4 Explain why you chose this option in 2.3:

2.5 If you had a choice in the future, would you consider teaching a course with lecture recordings? ☐ Definitely Not ☐ Probably Not ☐ Probably ☐ Definitely

2.6 Explain why you chose this option in 2.5:

2.7 How would you rate your students' learning experience when you use lecture recordings compared to the face-to-face lectures? ☐ Much worse ☐ Worse ☐ About the same ☐ Better ☐ Much better

2.8 Explain why you chose this option in 2.7:

## 2. Your opinions and perceptions [Continue]

2.9 To what extent did the lecture recordings help your students revise the work?
☐ Very Ineffectively ☐ Ineffectively ☐ Neutral ☐ Effective ☐ Very Effective

2.10 Explain why you chose this option in 2.9:

2.11 What do you see as the role of lecture recordings in your teaching and learning practice?
☐ As an enhancement to my teaching pedagogy (Augmentation)
☐ As a tool that transforms the way I teach (Redefinition)
☐ As a replacement for face-to-face lectures (Substitution)
☐ As a modification to my teaching (Modification)

2.12 Explain your answer in 2.11

2.13 Have you ever taken a MOOC, or engage in any form of online learning yourself?
☐ Yes ☐ No

2.14 If you answered 'yes' in 2.13. How did this influence your teaching practice?

## 3. Opinion scaled questions

| | | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
|---|---|---|---|---|---|---|
| 3.1 | Having lecture recordings online would affect how often my students attend class. | ☐ | ☐ | ☐ | ☐ | ☐ |
| 3.2 | I think that my pronunciation and use of language sometimes hinder my students' understanding in face to face lectures. | ☐ | ☐ | ☐ | ☐ | ☐ |
| 3.3 | I think that captions, subtitles and transcripts are essential in lecture recordings. | ☐ | ☐ | ☐ | ☐ | ☐ |
| 3.4 | I have the resources available to add captions, subtitles and transcripts to lecture recordings. | ☐ | ☐ | ☐ | ☐ | ☐ |
| 3.5 | I would prefer all my class lectures to be online as lecture recordings and face to face class to be used for discussions, tutoring and other learning activities. | ☐ | ☐ | ☐ | ☐ | ☐ |
| 3.6 | I value and desire flexibility in my teaching. | ☐ | ☐ | ☐ | ☐ | ☐ |
| 3.7 | I think lecture recordings allow me a more flexible teaching and learning experience. | ☐ | ☐ | ☐ | ☐ | ☐ |

## 4. Open-ended questions [Continue]

4.1 In what ways would you say students report on the usefullness of lecture recordings in their learning?

4.2 What are the most positive aspects of teaching a course using lecture recordings?

4.3 What are the least positive aspects of teaching a course using lecture recordings?

4.4 Has your experience teaching with lecture recordings influenced your teaching approach for a course/s? If yes, how?

4.5 What advice would you give to a faculty member considering using lecture recording for the first time?

# Appendix I – Examples of transcripts for Student interviews and focus groups

Interviewee: Er...How do I use it in my learning?
Ok so...if
I've erm...Now now I'm starting something
brand new, right ok so opened up the audio
and I sit and I listen to to the material
But I would never be to, and it's just it's
just a personal thing

Interviewer: Ya.

Interviewee: That maybe I just need to be
trained, I would
never rely on that totally er, so I listen
to it and then I have to refer to my study
guide, or to the textbook, or whatever. And
then I'm I'm reassured.

Interviewer: Ok.

ALL PARTICIPANTS: No.

INTERVIEWER: Ok, excellent, so everyone says "Yes". So, what do you understand, now that you've heard the, the academic definition… if I say to you, "Hi, guys, I'm your lecturer, we are going to do, have a lecture recording", what does that mean to you?

PARTICIPANT: It just means it's going to be recorded and, **[03:00]** like, we can play it then later.

PARTICIPANT: And if like you're preparing for exams or tests, you can listen to it again… make sure… it's going to be there, you can always access it…

INTERVIEWER: Ok, is that something good to hear or bad to hear, so when you hear those words uttered in your courses or in your degree, is that something that you go, "Ok, that's great!"?

ALL PARTICIPANTS: Ja, yes.

INTERVIEWER: Does that change your approach in class?

Interviewer: Ok, and what do you see as, what is a lecture recording?

Interviewee: Uhm, it's a recording of an online lecture that the, uhm, lecturers present it, then we can, ja, it's basically just a recording of the lecturers that the lecturers did, where they also show the work while they're doing it.

Interviewer: Ok, ok, and, what do you think about using lecture recordings in your learning?

Interviewee: I love using them because not all students study as quickly as others and some students need to listen to a thing more than once to understand it, so it's nice because you can pause it and you can play it whenever you need it.

Interviewer: Ok. How do you think other students feel about receiving lecture recordings?

Interviewee: I think there are a lot of students who also feel the same way because it's not, you don't have to use it if you don't want to use it, which benefits those students that only listens to a thing once. And it's also available for those students who like using online resources such as the recordings.

INTERVIEWER: So that's how it ties in to what you said in the regarding your teaching style. So, knowing that students will quote you, uhm, so that's, that's very interesting.

PARTICIPANT: Hmm. And we're aware that, for instance, if I had an open discussion in class, I wouldn't record what your political view, your opinion, how do you feel about these pieces of legislation, how does it impact on society, E T C **[08:00]**; I don't do any of that anymore. I now just give them a formal lecture, boring boring, put the stuff up on Blackboard and say, "Go read it at home". There's no real discussion, even when I opened the discussion in terms of the Blackboard Collaborate session, I had zero participants, not even one.

INTERVIEWER: Ok.

PARTICIPANT: Because now everybody says, "If I can't talk about it, why will I then basically talk about it", and that was their view on it and their take on it. So, it's great to say you measure me in terms of participation, you measure me in terms of decolonisation, you measure me in terms of transformative constitutionalism, but I can't talk about this in class.

## Appendix J – Ethical clearance letters

SCHOOL OF EDUCATION

Dr Carolyn McKinney
*Associate Professor*

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EDNREC2017-08-15

6 September 2017

Heinrich Prinsloo
M.Ed Programme

**RE: Ethical Clearance for Student Research Project**

I am pleased to inform you that ethical clearance has been granted by the School of Education Ethics Review Committee of the Faculty of Humanities for your research project entitled: **Lecture recording in UFS Undergraduate Law programmes: Exploring potential teaching and learning benefits.** I wish you all the best with your study.

Yours sincerely,

Associate Professor Carolyn McKinney
**Chair, School of Education Research Ethics Committee**

**From:** Heinrich Prinsloo
**Sent:** 28 September 2017 03:08 PM

Good day Prof,

Thank you so much for your response.

I have consulted the Post graduate school, and my UCT supervisors and all indicated that the current UCT ethics, along with below e-mail confirmation will suffice. Thus no additional documentation is required.

I am looking forward in working with and your faculty as I truly believe the research will serve the UFS well. The anonymity in our findings is of utmost importance and I will adhere to all the parameters set out.

Kind regards,

Dear Heinrich,

I am happy to grant the permission you have requested to conduct research in the Faculty of Law at the UFS, subject to the parameters you have set out regarding anonymity. Please forward any formal document you may require me to sign in this regard

Kind regards



UNIVERSITY OF THE FREE STATE
UNIVERSITEIT VAN DIE VRYSTAAT
YUNIVESITHI YA FREISTATA

*Inspiring excellence. Transforming lives.*

**From:** Heinrich Prinsloo
**Sent:** 19 September 2017 08:07 AM
**To:**
**Subject:** Permission for research

Good day Prof

I hope this e-mail finds you well.

I am currently enrolled for my masters in educational technology at the University of Cape Town. My research is investigating how the use of lecture recording as a flexible instructional tool can play a central part in addressing some of the key teaching and learning challenges found in Higher Educational Institutions.

I have already obtained ethical clearance for my research project (see attached) and require your permission as Dean of the faculty to implement my research in the following module: Any reference to the faculty, institution and modules are anonymous and fictitious as the main purpose of the research is exploratory in nature. This research would involve requests for interviews from myself and course convenors as well as survey and focus group of students. Participation would be voluntary.

The University of the Free State (UFS) have clear objectives in line with international trends to move away from traditional face to face lecture-based pedagogy to more flexible blended learning pedagogies like flipped classroom approach and collaborative learning. The use of online educational tools at the UFS LAW faculty has seen a regular and annually increasing adoption over the last couple of years and thus my interest in evaluating it from a research point of view.

My main research questions are as follows:

- What advantages does lecture recording afford lecturers and students in regards to teaching and learning?
- What are the disadvantages of using lecture recording in regards to teaching and learning?
- To what extend does the use of lecture recording address ill structured knowledge domains?
- To what extend does the use of lecture recording as address well-structured knowledge domains?

I believe that the research is significant and creates opportunities to serve the faculty of Law in the following ways:



1. Current phenomena like student protests and academic disruptions can be addressed at UFS and HEI's across South Africa. The effective approach of lecture recording tools as a continuous teaching strategy, not only used during times of unrest and disruption but continuously as a sustained pedagogical solution.

2. Through the research's investigation of lecture recording as a multimedia tool pivotal aspects in curriculum design can be addressed, measured and isolated.

3. The study can help develop guidelines for training of fundamental skills in the use of multimedia lecture recording tools.

4. The study can further our understanding of student and lecturer preferences in relation to the use of multimedia lecture recording tools.

The research offers timeous practical organisational influence in a time where HEI's are strategically and timeously attempting to address difficult educational challenges.

Included in the e-mail is reference to my supervisors at UCT, should you require any additional information or documentation regarding the research I am happy to send it on.

Kind regards
Heinrich